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NUST Institute of Peace & Conflict Studies (NIPCONS)
Centre for International Peace and Stability (CIPS)
National University of Sciences and Technology (NUST)
Editor Email: editor@njips.nust.edu.pk
Phone: +92-51-90856781; Fax: +92-51-90856702
Website: njips.nust.edu.pk

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Efficacy of Lessons Learnt and Best Practices in United Nations Training System

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Azam Agha[1]

Abstract

The United Nations (UN) finds itself involved in varied circumstances in present times. This necessitates increased emphasis on evolution of employment doctrine, instructions and training methodology. Drawing on lessons of history has always been considered a wise course of action while preparing for future, and in the same vein, UN Integrated Training Service (UNITS) also opted to tap into past experiences. In order to improve performance as well as to keep their contingents out of harm's way the member states started to clamour for sharing of lessons learnt from previous missions within the community of peacekeepers, and to learn from an easily accessible repository of best practices which produced the best results. This article aims to analyze the whole process of revamping at UN headquarters level with a view to coming up with workable solutions to make it even better. It argues that pre-induction training institutions have been kept largely out of the loop, while relying entirely on post-induction training. A section on Lessons Learnt and Best Practices is also markedly absent from latest Core Pre-Induction Training Material (CPTM) / Specialized Training Material (STM) issued by UNITS. With lack of prior training and pre-occupation with their primary functions in the mission area, dedicated implementation of the policy at best becomes questionable. The article further identifies that the UNITS has mostly remained limited to available analytical reviews of its past operations which in turn have remained limited in scope to strategic level. Despite identifying this peculiarity, no attempt has been made to constitute special committees to review past mission experiences broken into individual, tactical and operational lessons and best practices. This reflects on the need to carry thorough review of the latest policy, following which the UN would be able to quickly remedy the shortfalls and thus be in a position to take on new challenges in a befitting manner. In this vein, the paper aims to establish and emphasize the potential to learn from the available best practices in terms of UN missions.

Keywords

United Nations, Peacekeeping Missions, UN Integrated Training Service, best practices

Introduction

United Nations Integrated Training Service (UNITS) issued its latest training policy in 2015 through which it attempted to enrich its training efforts with lessons learnt and best practices based on its achievements in previous missions. Ever changing international environment necessitates an integrated UN response capable of not only overcoming its internal shortcomings but also of being able to meet new challenges.

[1]*Azam Agha* is a retired Pakistan Army officer, currently serving as a Visiting Research Fellow at the Department of Peacekeeping Training (PKT), Centre for International Peace and Stability (CIPS), National University of Sciences and Technology (NUST), Islamabad, Pakistan.
E-mail: rvfazamagha@cips.nust.edu.pk

Within this context, this paper aims to explicate the process of revamping UNITS at UN headquarters level. In addition, it also analyzes the efficacy of lessons learnt and best practices in UN training system with a view to recommending changes to make the policy more wholesome.

The article is divided into five distinct sections which logically cut across important factors impacting upon efficacy of lessons learnt and best practices in UN training system. First section is dedicated to tracing history of UN's peacekeeping operations with emphasis on its changing nature. Environment necessitating this change, its relationship with world politics and consequent shift of UN operations from more benign traditional approach towards a more robust military leaning tendencies have been discussed. This brings up the issue of legality of intervention and the diversity of world opinion in case of each conflict; the diversity seriously hampers member nation's willingness to contribute as it impinges upon their national policies. Similarly dynamics of alliance for collective defense have their own inclinations. In the second section three examples of past UN missions have been cited. The section reflects on internationally recognized reviews of these missions in order to draw pertinent conclusions. It is consequently argued that whereas strategic inadequacies have been addressed to some extent, little attention has been paid to framing comprehensive analyses at individual, tactical and operational levels.

The next two sections look into the diversity among troop contributing countries and present a brief history of establishment of UNITS. Even though the list of troop contributing nations is long and spread over 122 countries, most of advanced nations do not choose to contribute in substantial numbers. This means that the UN has to rely predominantly on Ethiopia, Rwanda, and Bangladesh; the top three contributors as of May 2019. With such diverse military doctrines, equipment and training levels, it becomes increasingly challenging for countries and their respective leaderships to produce results with integrated contingents. The inoperability of equipment and weapon systems, intelligence gathering, and communication systems further create an operational dilemma. Furthermore, maintaining such diverse equipment in operations creates problems for logisticians. To overcome these problems and to respond to scathing criticisms, the UNITS came up with a strategy to fill this void. It has itself been evolving over the years and trying to remain abreast with ever-changing requirements. A brief look into its evolution and struggles resulting into its latest training policy is thus explained in detail.

The last two sections are the crux of this article as they deal with the concept of best practices and lessons learnt, followed by an in-depth analysis. It reveals that despite passage of significant time, allocated resources and efforts, the new policy still falls short of ideal. Seven important shortcomings have been identified along with suggested solutions to obviate these drawbacks.

UN Peacekeeping Operations at a Glance

The United Nations Organization (UNO) succeeded the League of Nations on October 24, 1945. The League of Nations was created to facilitate peaceful resolution of territorial disputes. Its duties included "monitoring or reporting and investigation or supervision, the separation of opposing forces, establishment of neutral zones between parties, confirming implementation of mandates formed by the League Council, and lastly, administering transfer of territory between parties" (Daniel, Hayes, & Oudraat, 1999, p. 7). The League failed in its stated mission when countries

started to attack each other in their quest for expansion. And thus after the League's final operation in 1934, the Second World War started. The UN was born when the five permanent members of the UN Security Council (UNSC); including the United States (US), Britain, France, China, and Russia, ratified the Charter. The membership originally included 51 nations but later on increasing to currently include 193 sovereign states.

UN peacekeeping has continuously evolved with changing environment since its beginning in 1945. Initially, like its predecessor, peacekeeping was limited to observer missions as was evident in its first four operations, which occurred between 1947 and 1949. Later in 1956, Dag Hammarskjold, the second Secretary-General of the United Nations created the first UN peacekeeping force in response to the Suez Canal crisis, and the UN dispatched 6,000 soldiers with the mandate of self-defense only. This type of involvement in a peacekeeping situation characterized the missions up until 1978 and is often referred to as traditional peacekeeping (Schanbel & Thakur, 2001). These traditional peacekeeping missions had several distinguishing features such as;

- Consent and cooperation of parties to the conflict;
- International support, as well as support of the UNSC;
- UN command and control;
- Multinational composition of operations;
- No use of force;
- Neutrality of UN military between rival armies;
- Political impartiality of the UN in relationships with rival states.

The nuclear bombing of Japan by the US in August, 1945 and subsequent rivalry between then USSR and US started to encourage states away from UN and towards a system of collective defense through alliances such as the North Atlantic Treaty Organization (NATO) and the Warsaw pact. Presence of effects of Cold War between the two super powers were also felt inside the UN and for a considerable length of time peacekeeping operations did not pass through UN. While some of these missions were successful, and others were not, the Multinational Force and Observers (MFO) Group in Sinai and the Indian Peacekeeping Force (IPKF) in Sri Lanka qualify as two examples of these types of missions. Many of these missions had similar characteristics to traditional UN peacekeeping i.e. passivity and neutrality.

With end of the Cold War, the traditional rivalries between the super powers were somewhat abated and it consequently gave rise to unprecedented cooperation within the Security Council. In mid-1994, at the peak of UN peacekeeping, there were 17 operations, which involved more than 87,000 people. In post-Cold War era, the UN was confronted with a new set of crises. Prior to 1990s, most conflicts were interstate where two clear rivals were evident and United Nations was to create an environment of peace between the two across a recognized international border. However, following the end of the Cold War, another threat emerged; that of an intrastate conflict where boundaries and jurisdiction blurred and so did the recognizable belligerents. States were collapsing and there was violence at an unprecedented scale. Genocide and rape were used as weapons of war resulting into humanitarian tragedies, such as; food crisis, mass migrations and consequent refugee crises (Daniel, Hayes, & Oudraat, 1999). Keeping in view the changing

circumstances, following types of tasks characterized peacekeeping operations in this post-Cold War era;

- Military disengagement, demobilization, and cantonment.
- Human rights monitoring and enforcement.
- Information dissemination.
- Policing, observation, organization, and conducting of elections.
- Rehabilitation and repatriation.
- Administration.
- Overseeing regional or non-UN peacekeeping operations.

Even though the UN had generally been opposed to the notion of using force to keep peace, its benign policy was severely put to the test shortly after the post-Cold War period. There were situations which demanded use of force but then the question of legality of armed intervention had to be kept in view. The General Assembly was clamouring for results and use of force under UN Charter, but (Chapter 6) was not delivering. The newer and widely accessible media brought news of massacres and starvation to every corner of the world and an international demand for more robust UN's action became vociferous. Resultantly, once the UN determined the necessity of a force, its application became an issue; a thin line between national sovereignty and issue of neutrality had to be carefully negotiated. This problem was highly visible in UN peacekeeping missions in Somalia, Bosnia, and Rwanda. Consequently, the UN had to face criticism from member states and negative propaganda from general public. In fact it seemed to be entrapped in its own rules and weight, and could not justify its inaction or feeble response where it chose to take action. In these missions the UN created its own protection forces. This attempt proved disastrous in that UN protection forces did not have the military weight to offer either protection or force.

Scathing criticism on United Nations' performance coming from outside as well as from within produced results , as in the case of Brahimi Report 2000 that called for a major overhaul of UN policies and application. Consequently a complete revamp of its internal structures and increasing use of the option to outsource some of its protection tasks to regional, and in some case extra regional alliances and pacts are increasingly being witnessed today. Entities like African Union, North Atlantic Treaty Organization, and International Security Assistance Force in Afghanistan are increasingly being observed to provide forceful intervention under the UN's auspices and mandate in different regions of the world.

Lessons Learnt from UN Peacekeeping Operations

Srebrenica (1995)

Towards the end of 1999, the world was stunned by a very candid internal report reviewing UN's failures leading to deaths of thousands under its protection in Srebrenica in 1995 (United Nations General Assembly, 1999). This report highlighted policy failures, command and structural weaknesses as well as squabbling within the Security Council itself which led to the fiasco. Grim reality was that most of these errors were avoidable if timely decisions based on real intelligence were taken. UN Secretary General Kofi Annan assumed complete responsibility for these mistakes, which had occurred during his tenure as Under-

Secretary-General for peacekeeping. Summary of lessons learnt as taken out of the report is appended below for reference;

- Peacekeeping operations without political consensus are doomed to failure.
- Peacekeepers under their traditional role and with light arms must never be deployed into an environment in which there is no ceasefire or peace agreement.
- Safe areas must never be established without consent of the parties to the conflict or credible military deterrence.
- Delay in use of force and appeasement of warring factions are a sure way to disaster.
- Means provided must be in consonance with the mandate otherwise mandate cannot be fulfilled.
- Timidity masquerading as political neutrality has also led to the operational failure to openly confront those who challenge a peace keeping objective in the field.

Rwanda (1994)

A month after the Srebrenica report, an international panel chaired by former Swedish Prime Minister, Ingmar Carlson tabled a similar report on the UN's failure to prevent the genocide of half a million Rwandans in 1994. In summary the first UN mission to Rwanda (UNAMIR I), was initially at a strength of 1700, however it was reduced to 270 as the US after its ignominious defeat in Somalia did not have the resolve for funding yet another disastrous mission by UN. Rwanda's holocaust of 1994 started after its President was killed in his aircraft. The Tutsi dominated Rwandan Patriotic Front (RPF) took advantage of the chaos by killing as many Hutus and their supporters as possible without anyone suspecting them of their capability. The inquiry report's recommendations are as appended below (Report of The Independent Inquiry, 1999);

- An action plan in light of Genocide Convention must be prepared by UN. It must include early warning and prevention capabilities.
- Special training for staff both at UN headquarters, in agencies and programmes, and personnel in field missions, to identify warning signs, analyse them, and translate it into appropriate action.
- In situations where peacekeeping operation might be confronted with the risk of massive killings or genocide it must be made clear in the mandate and rules of engagement of that mission that traditional neutrality cannot be applied in such situations.
- Improve capacity to conduct peace operations and in particular to ensure rapid deployment of missions into the field.
- Ensure necessary resources for peacekeeping, including UN standby arrangements, and decision to withdraw contingents resting with UN and not contributing nation.
- Increase preparedness for contingency planning at all levels.
- Ensure rapid availability of logistics.

- Need for robust mandate commensurate with needs on ground.
- Ensure leadership of an operation arrives in a well-planned manner.
- Full coordination between UN Secretariat and other affected agencies, and between peacekeeping operations and NGOs active in the area.
- Ensure lessons learnt from previous missions are incorporated in planning of new one.
- Improve cooperation between UN and regional organizations.
- Improve flow of information within UN system, and to Security Council.

The African Union's Stabilization Mission in Somalia

The African Union Mission in Somalia (AMISOM) is a regional peacekeeping mission in place by the African Union under the auspices of the United Nations Security Council. Its mandate includes supporting transitional governmental structures, implementing a national security plan, training the Somali security forces, and assisting in creating a secure environment for the delivery of humanitarian aid (Resolution 1772, 2007). As a part of its duties, AMISOM also supports the Federal Government of Somalia's forces in their battle against Al-Shabaab militants. International Peace Institute (IPI) has published an excellent analysis. Summary of the analysis is appended bellow (Lotze & Williams, 2016);

- Missions must be appropriately configured to fulfil their mandate.
- The political and military elements of a stabilization strategy must be in sync.
- Extending state authority is not synonymous with peacebuilding, at least in the short term.
- Territorial expansion is less important than degrading the capabilities of spoilers.
- Strategic coordination among relevant partners is a crucial, mainly political task.
- Lack of coordination can have negative political and military effects.
- Effective stabilization requires positive relationships between peacekeepers and the local population.
- There can be no successful exit without building capable, legitimate, and inclusive national security forces.
- UN organizational frameworks and bureaucratic culture are not suited to supporting war-fighting operations.

A glance through lessons learnt at the end of various UN peacekeeping missions point towards a stark reality that most of analytical studies and their recommendations contribute towards improving the strategic level of UN operations and very little is visible for day to day functioning at tactical and operational levels. Notwithstanding the fact that Department of Peacekeeping Operations (DPO) at UN headquarters is doing its best to gather and incorporate in its training manuals and guidelines all the lessons learnt and best practices from across the globe, yet we find that either these do not reach the right audience or the activity is not wholesome. A study of various UN peacekeeping operations point towards a strong connection between intent, mandate and capability. Whenever UN operations were undertaken without clear

intent as in the case of Srebrenica as cited above, or the mandate and capability were not commensurate with mission as was evident in Rwanda, the recipe for disaster was complete. Aside from these strategic shortcomings, there were many occasions where military units and headquarters as well as charismatic leaders evolved their own methodology, while remaining within the UN standing operating procedures which produced excellent results. Best practices at tactical levels whether these pertained to developing a rapport with the local community, or dealt with effective patrolling and escort techniques which proved useful, needed to be shared across the mission as well as UN vide level.

Having had a glimpse of different UN peacekeeping operations and before proceeding further it would be useful to discuss the support that United Nations gets from its members as far as boots on ground is concerned. Diversity in ethnic, religious, and social back grounds that these troops represent is further complicated by the doctrinal, equipment, procedural, and training disparities.

UN Peacekeeping and Integrated Training System

Bulk of the troops that comprise United Nation's peacekeeping effort come from developing or under developed countries. Even though within 122 Troop Contributing Countries (TCCs) there are many developed nations but their contribution is insignificant. List of top ten contributors out of 122 as of May, 2019 is given below which points to the diversity in their nature. The contributors also include militaries from USA, UK, Austria, Sweden, France, and Australia etc., albeit at a smaller scale.

Countries	Military Contribution
Ethiopia	7499
Rwanda	6546
Bangladesh	6487
India	6319
Nepal	5834
Pakistan	5092
Egypt	3778
Indonesia	2805
Ghana	2777
Senegal	2645

Table 1: Troop Contributing Countries by their Size

It is evident that personnel for this all-encompassing task by United Nations come from countries with diverse back grounds of military as well as civilian sectors. Their level of sophistication, and education is different and includes from highest to lowest in the spectrum. Similarly concerning their military, the doctrines, equipment, and training differs diagrammatically. Whereas some nations have the resources and wherewithal to equip their militaries with latest equipment in command, control and intelligence gathering capabilities employing state of the art satellite imagery and drones, there are others which find it difficult to even use rudimentary military maps.

Military operations encompass a wide canvas from large scale employment of heavy forces to minor operations more attuned to latest 'Low Intensity Conflict'. Actual combat experience goes a long way in preparing a military to make its presence felt in any theatre of operation. Diversity in handling various types of operations goes further to bring maturity and confidence in a force and yet it reveals that whereas some countries have had extensive operational experience while others have not had similar exposure. Consequent to national needs, the training philosophy and its intensity is also varied in all these nations resulting into an operational nightmare for the integrated UN Force.

There is an operational requirement that these participants in peacekeeping are brought into some shape before deployment and continue to train while in mission area so as to become a coherent and useful tool in the hands of leaders in peacekeeping operations. UN has established a well thought out system of pre-deployment, and in-mission training that draws on its own training policy and doctrine while rejuvenating it periodically through lessons learnt from its vast peacekeeping effort. Apart from UN, the troop contributing countries also put in their training effort before the earmarked personnel leave for overseas. But this training effort is again influenced by their unique capabilities. The facilities available in a country, its doctrinal aspects, capacity and level of expertise of their training institutions is different and resultantly the troops cannot be expected to gel seamlessly when these become part of an integrated UN force in a far-off land. United Nations' Integrated Training Service (ITS) attempts to bridge this gap by outlining detailed policy and lessons to be taught as part of pre induction training but again it can only contribute partly to the effort. Majority of UN training institutes remain out of the loop as far lessons learnt and best practices are concerned and therefore have to contend with the last updates on lessons plans issued by UNITS. Above all, there is little towards unifying and streamlining the military training aspects under UN environments and thus are left to indigenous policies and doctrines of various nations.

United Nations Integrated Training Service (ITS)

UN Integrated Training Service is responsible for managing all training activity for UN's Peacekeeping. It provides advice and training materials to all troop and police contributing countries based on a unified curriculum and suggested methodology. UN Peace Keeping Resource Hub (2019) defines the concept of peacekeeping as any training activity which aims to enhance mandate implementation by equipping UN military, police or civilian personnel, both individually and collectively, with the knowledge, skills and attitudes to enable them to;

- Meet the evolving challenges of peacekeeping operations in accordance with principles, policies and guidelines, as well as lessons learnt from the field.
- Perform their specialist functions in an effective, professional and integrated manner.
- Demonstrate the core values and competencies of the UN.

The role of member states in working towards the establishment of a comprehensive framework has also been remarkable and reflects in the following resolution;

> In General Assembly Resolution A/RES/49/37 (1995), Member States recognized their responsibility for the training of uniformed personnel for UN peacekeeping operations and requested the Secretary-General to develop training materials and establish a range of measures to assist Member States in this regard. With the restructuring of Department of Peacekeeping Operations (DPKO) and establishment of Department of Field Support (DFS) in 2007, the Integrated Training Service (ITS) in DPET was created as the responsibility center for peacekeeping training. Peacekeeping training is regarded as strategic investment that enables UN military, police and civilian staff to effectively implement increasingly multifaceted mandates.

Towards this end, ITS develops peacekeeping training policies and guidelines while taking into consideration expertise from member states, various Peacekeeping Training Institutions (PKTIs) and Subject Matter Experts (SMEs) both in military as well as in civil domain. It categorizes training materials into Core Pre-Deployment Training Materials (CPTMs), and Specialized Training Materials (STMs) for troops earmarked to be employed in UN peacekeeping operations. In theory at least it takes into cognizance latest developments in the field, focusing on best practices adopted by individuals, groups, and at mission level. Lessons learnt from UN's successes and failures are also kept in view while developing guidelines. The aim is to improve the quality of combat power generated by troop contributing countries in support of UN peacekeeping operations; to develop them into a more cohesive and manageable integrated force. To perform this onerous responsibility the ITS is organized as shown in Figure 1.

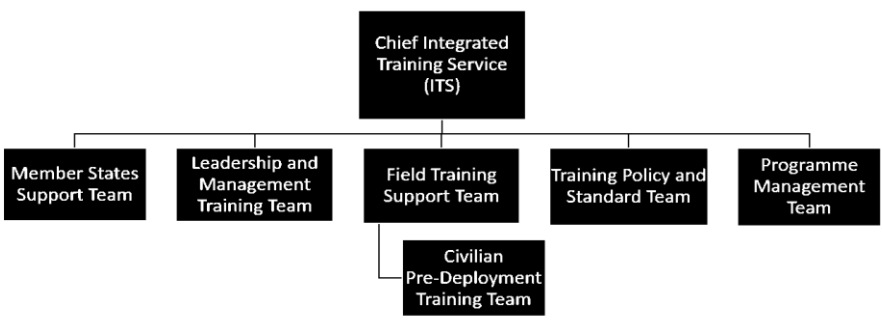

Figure 1: Organization of Integrated Training System (ITS)

Member states recognized the requirement of peacekeeping training and brought to the attention of the Secretary General in 1995 for the same. However, despite this and recognition of importance of training in Brahimi Report (2000), which contained a number of recommendations in this area, it was only in 2008 that the UN drafted its first comprehensive strategy for training after a lapse of thirteen years. With continuously changing peacekeeping environment which increasingly witnessed a transition from Chapter 6 to Chapter 7 in UN mandate, there has been a considerable increase in the number of national, regional, and international centers providing training for UN peacekeepers. Where it represents a welcome change from the past and addresses to some extent the disparity of effectiveness among various

troop contributing countries, it also poses challenges in relation to the quality of various training actors, with regards to doctrine, policy guidance, and certification. There is a need to ensure that training, no matter where it is done and by whom, adheres to common standards and produces peacekeepers with the necessary skills. With facilities spread all over the world under different environments it is an enormous task; a task which requires detailed interaction, and close monitoring. Furthermore, starting from UN doctrine of employment till low level tactical procedures, from equipment standardization to weapons interoperability, from communications to logistics, the list of issues needing ironing out are endless and traditional UN speed of action is not in keeping with ever increasing frequency of conflicts the world over. There is an urgent need to move on war footing and address all these issues in close harmony with the troop contributing countries. Similar to other professional militaries, there is a need to come up with manuals and procedures of employing infantry units, logistics, intelligence, services, and logistics; need for standard data templates of each unit and sub unit for calculation of operational and logistic estimates, requirement of ammunition, and other UN specific equipment.

With the diverse experience of UN peacekeeping operations spread over all parts of the world and under all types of scenarios, it would be incredibly concerning if the organizational memory did not register what worked best under a given set of circumstances and what did not. Experiences of successes and failures at individual, tactical, operational and strategic level are simply too precious to ignore and the only requirement is for developing an integrated and effective system of recording and sharing. Since 2007, this function has been taken over by the 'Division for Policy, Evaluation and Training and Policy' and 'Best Practice Service' is one of its main constituents.

Best Practices and Lessons Learnt

For the UN headquarter, the journey started in 1995 with establishment of its first best practices capacity, consisting of three staff members. This limited capacity was indeed not sufficient to meaningfully extract data from all peacekeeping missions, verify and consolidate it, and finally to disseminate it. The problem got further compounded with trend of change in UN mandates after 1990s. After the Cold War era, numerous conflicts started to appear and Peacekeeping troops began to find themselves in complex and fluid environments that required them to adapt, create, and learn on a daily basis in order to achieve their mission mandate. There was a need to identify valuable lessons learnt and adaptation of best practices by various missions, recording of data after validation, consolidation into various levels of operations and then finally to share these among all the partners. This enterprising task needed more manpower, and organization with global reach if not global presence at all times.

Between 1995 and 2000, this limited staff with limited resources travelled to peacekeeping missions, interacted and consulted with senior leadership and experts. These efforts resulted into drafted reports (Peacekeeping Best Practices, 2007). The Lessons-Learned Unit produced lessons-learned studies focusing on best practices from various missions. However, soon the practice proved to be insufficient as well as cursory. Inadequacy of the whole exercise is evident in the words of Secretary General himself who commented following on the report:

> The results of a survey conducted by the Department of Peacekeeping Operations of the Secretariat in 2004 showed that staff members in the field wanted better institutional guidance. Of the 594 respondents, 50 per cent indicated that they had to recreate guidance (or "reinvent the wheel") "all the time" or "very often", and 46 per cent indicated that they had received no guidance materials or oral guidance upon starting their current job. Only 28 per cent responded that they had received any kind of written instructions in the form of policies, manuals, best practices or otherwise. The survey and the findings of the Panel on United Nations Peace Operations highlighted the need for improvements in the lessons-learning system available to peacekeeping personnel at that time.

Brahimi Report (2000)

The UN Secretary General convened a high-level Panel, to review the UN peace and security activities in its entirety, and at its head he chose Mr. Lakhdar Brahimi, the former Foreign Minister of Algeria. After a very thorough analysis which involved extensive consultation with all stake holders the panel submitted its report on 17 August, 2000 the panel observed that UN system's ability to tap invaluable resource of lessons learnt and best practices was inadequate and therefore could not do justice to development of operational doctrine, plans, procedures or mandates. It also opined that the work of DPKO's Lessons Learned Unit did not influence peace operations, practices, and the compilation of lessons learned was relegated to a ritual meant for end of mission activity only. In its view, the essence lay in capturing and retaining lessons learnt and best practices for the benefit of other concurrent missions as well as for future missions in real time rather than waiting for next update after five years. The report recommended that the capacity needed to be enhanced and be located where it could work closely with and contribute to ongoing operations while at the same time had a say in mission planning and doctrine and/ or guidelines.

Secretary General's Report on Peacekeeping Best Practices (2007)

As per this report, an assessment of training policies of some twenty international organizations was carried out to ascertain as to how did they benefit from 'Best Practices and Lessons Learnt' in their respective fields. The new system sought to encompass all activities including but not limited to lessons learning, validation, policy formulation and dissemination. It also took upon itself over-watch of training, implementation, and evaluation. In July, 2007 further restructuring was carried out, and methodology was further institutionalized through establishment of a brand-new 'Policy, Evaluation, and Training Division'. After this regrouping the Peacekeeping Best Practices Section (renamed from Peacekeeping Best Practices Unit in 2005), the 'Integrated Training Service' and a new evaluation capacity was brought under a single Division. The new Division was designed to provide best practices, guidance, development, and training services to both the DPKO and the Department of Field Support to ensure that the two departments operate according to a common doctrine. As per the report, lessons-learned and best practices activities were coordinated by the Knowledge Management Team. It sought to disseminate information through indirect means of supporting online knowledge networks, and through the peace operations Intranet. This team was responsible for (n.a, 2007);

- Coordinating and providing guidance to the network of field-based Policy Best Practices Officers (PBPOs);
- Developing standardized tools for the capture of best practices and lessons;
- Processing and analyzing best practices reports to identify major trends and issues, which are then brought to the attention of the senior management of the DPKO and the Department of Field;
- Support and help shape the policy planning agenda.

Despite lapse of precious time, and number of improvements, it becomes starkly clear that all the effort is focused upon revamping the headquarter management while missing the most important link in the whole process, i.e. the field mission. BPOs are nothing but hastily nominated amongst existing staff at various field missions who are actually employed for other duties and cannot hope to do justice to either of the hats they are supposed to be wearing at the time. They are neither trained nor qualified for the onerous responsibility. Templates and various other tools they are proffered by the UN headquarter are new to them and can hardly be of any use. They are left to decide on their own as to what to include and what to ignore. There is no organized framework within the mission level which ensures that lessons learnt and best practices are identified, analyzed, put into shape for reference and logged under appropriate individual, tactical, operational or strategic level. There is no mandatory periodical/on occurrence input from missions to UN headquarters. Consequently, concurrent missions and operators are once again left out till a consolidated version of the bulletin is received. Similarly, all the training institutions at member country level are left out of the whole process. In addition, there is no mandatory mechanism to ensure that they receive and incorporate the valuable input into their curriculum in a regular and comprehensive manner.

UNDPO's Current Policy

UNDPO's latest policy on 'Knowledge Sharing and Organizational Learning' was released in September, 2015. As against the policies and guidelines in the past, this policy is comprehensive and in detail. It covers many aspects and seeks to promote learning from best practices and lessons learnt process. It addresses all UN personnel and declares learning through this process mandatory while holding senior leadership among civilian, military, and police forces under UN mandate within a mission area responsible. It sets out that lessons learnt after each significant activity shall be integrated into the peacekeeping process by ensuring that all major or minor activity while it is at planning stage shall be preceded by review of all relevant lessons learnt and logged best practices. It also makes it necessary for UN headquarters staff to do the same while benefitting from United Nations system organizations, regional organizations and private sector.

It goes onto require designation of PBPOs in all missions and designation of Focal Point (FP) in each Headquarters, but falls short of instituting a special cadre of specialist UN officers for this purpose. The policy requires of all mission management to create conducive environments for documenting and learning through this process as well as contributing to collective UN memory.

Analysis

Peacekeeping Institutions

Despite issuing a very comprehensive policy on 'Lessons Learnt and Best Practices' in 2015, an all-important training resource in the shape of member countries' pre deployment training institutions have not been kept in the loop. These institutions strictly employ UNITS provided training material and off and on continue to help out UN by contributing valuable training material, and yet missing these institutions from benefitting from the new policy is not understood. Recording of lessons learnt from a challenge or best practices from a success story is a subject which cannot be acquired by an individual or a group in a short lecture in mission area. Ideally, the latest policy along with already acquired lessons must be shared fully with member countries so that these can be incorporated in pre-induction training of individuals and contingents. Similarly, if these institutions are consulted before compiling these lessons then valuable input can be provided by member countries with their own knowledge gained from returning contingents. There is a need for utilizing member states' capabilities to reinforce and outsource this important facet of training.

Tactical, Operational and Individual Lessons

Available resources are replete with excellent reviews of various UN missions, their achievements and challenges. However, majority of these only analyze and draw lessons at strategic level. It is of great concern that whereas the performance and actions of state actors, UN headquarters procedures, in-action or diverse interests of world powers, and strategic environments are discussed threadbare and valuable lessons for improvement are recommended and mostly incorporated in UN systems and yet operational, tactical, and individual level actions are missed. Brahimi's report of 2000 is a case in point on this grave omission and highlights that there are actions and Standing Operating Procedures successfully employed by individual members, leaders, and contingents in riot control, in winning the hearts and minds of beneficiaries, patrolling techniques under difficult environments which go un-recorded and are not analyzed for their usefulness. Similarly there must be so many valuable lessons among UN program operators and professionals which need to be recorded for emulation in other missions. There is a need to encourage and develop a culture of recording and sharing personal, group and mission level techniques for guiding others. Similarly pitfalls and failures in every facet of UN activity could prove extremely useful for others if recorded and shared in real time.

Pre-Induction Training Limitations

All training activity includes three distinct phases; pre-induction, during operations, and after mission de-briefing and analysis. A detailed analysis of UN's latest policy on the subject reveals that whereas it seems comprehensive enough regarding the middle phase, it is lacking in the first and last. During employment in mission areas all the individual actors and groups are so immersed in their day-to-day activities that in-mission training becomes a chore. Obviously, lacking the ability to spare key individuals for this all important aspect, only relatively spare redundant individuals are made available to go through motions of this UN requirement. Resultantly, only a handful and insignificant percentage undergoes it and thus the overall spirit of this initiative is lost. If introduced and made part of syllabus in the pre-induction training

package being run by various member states the individuals would arrive in mission area with knowledge of the subject and importance of recording their actions suitably logged in their minds, and further building on it in mission area would then become meaningful and easy.

Core Pre-Induction and Specialized Training Material

There is very detailed and pertinent training material in the shape of Core Pre-Induction Training Material and Standardized Training Material available on main UN training site for all to benefit from. Whether consulting it for reference, research, or training, the guidelines and SOPs on almost all subjects are explained which is a very commendable job. However, the only thing that is missing in its entirety is the 'Lessons Learnt and Best Practices' section. This omission has not occurred only with the issue of its latest policy but has been absent from the outset. Resultantly, whatever little and fragmented effort has been made towards its propagation in the past, the achievement is not available on this site which brings to the fore an important grey area.

Actual Implementation of New Policy

It is a known fact that within corporate businesses and to an extent in military quarters, there is a distinct gap between issuance of a policy and its actual implementation. It takes time for new instructions especially if these are of continuous nature and are to be followed in perpetuity, before these become routine. A horde of measures including comprehensive dissemination, translation into measures at different levels of implementation, cross checks on internalization, over sight regime on adherence, and process of accountability in case of omission, are needed before a new policy takes hold and becomes routine. Even though the new policy attempts to address this aspect but in a cursory way and leaves much to be desired. There is definitely a need for follow up instructions, a regime of incentives and accountability and broad dissemination before any hope of its actual implementation can be materialized.

Need for Separate Cadre of Recorders

The concept of analyzing actions and activities at individual, tactical, operational and strategic levels require professional acumen, a trained analytical mind, and above all a dispassionate view. It is in the same vein that a cadre of political, military as well as historical analysts has emerged within society and the subject has been taken over not by participants or stakeholders of an activity but by extraneous specialists who are better placed for an impassive view. A UN member whether in civil sector or in uniform is at best a manager of a particular set of activities and can seldom be entrusted with analyzing his/her own actions. Furthermore, contingents of police and military from any member country join a mission team for a specified duration which is both short and non-repetitive and therefore incapable of producing professional recorders UN needs to recruit qualified and experienced individuals who can be rotated on important missions to hunt for valuable lessons and best practices.

Need For Synthesis at Strategic, Operational, Tactical and Individual Levels

Continuous reform leading towards improvement of a process makes it more efficient, and this leads towards better achievement of goals. There are varied levels of reform ranging from strategic down to individual level, and since each level is

intertwined, reform at one level to the exclusion of rest would never deliver desired results. There are invaluable analytical studies of UN operations carried out by UN special committees, regional organizations and alliances such as African Union, NATO, and European Union etc. Whereas these studies have highlighted pertinent lessons but most of these are within political and strategic domain, and resultantly many reforms at UN level corresponding to same domains have been affected. On the other hand, quality work at recording lower levels has remained mostly elusive and operational and tactical planes have consequently suffered. There is a need to form special committees in order to revisit major achievements and failures of past UN operations with the scope restricted to these levels. Similarly, the latest policy should also address this issue for more inclusive lessons learnt and best practices in future.

Conclusion

Learning from past mistakes is a great human attribute which unfortunately is often forgotten whenever a newer endeavor is undertaken. It is only a catastrophic failure that reminds one of its efficacies. Man's quest for peace has seen the use of instrument of war for prevalence of peace, albeit at others' cost. Resultantly, different models have been tried to avoid war, and formation of League of Nations and later United Nations point towards the same elusive goal. UN, established in 1945, has come a long way towards achieving this goal, and where pre-emption has failed, it has actively taken part in the conflict to stem it from further spread. From practice of benign and almost passive monitoring of a conflict in the past it has morphed into a strong *intervention force* which seeks to fulfil goal of peace, in which it is supported by its member states which contributed in all ways including provision of troops. Where diversity among its members make its character rich, the same diversity creates a dilemma of employment of its troops in the field. In order for making this milieu of troops into a well-knit team prepared to take on newer challenges, the UNITS continuously endeavors to provide guidelines and material for training. For this purpose, services of international experts are employed on one hand, history or past practices are tapped into on the other.

Issuance of its policy in 2015 is a reminder of importance it places on lessons learnt from past mistakes and adoption of best practices that witnessed success. A great deal of emphasis and details have been covered in this policy, but at the same time a lot has been left out. While identifying and learning from strategic errors, it has not dealt with operational, tactical, and individual level. Similarly, significance of pre-induction training by troop contributing countries has been relegated to the exclusion of member states in the process. It has been argued that there is need of redressing these grey areas to make the process of transforming member state's contingents into a well-knit and integral UN team for successful future operations. While endeavoring to learn from past experience, it is always useful to keep in perspective this quote by Margaret MacMillan; "We can learn from history, but we can also deceive ourselves when we selectively take evidence from the past to justify what we have already made up our minds to do."

References

Assembly, U. N. (1999). *Report of the Secretary General pusuant to the General Assembly Resolution 53/35: The Fall of Seberenica*.

Assembly, U. N. (2007, December 18). *Peacekeeping Best Practices: Report of the Secretary General* . Retrieved from https://www.un.org/en/ga/search/view_doc.asp?symbol=A/62/593

Daniel, D., Hayes, B. C., & Oudraat, C. D. (1999). *Coercive Inducement and the Containment of International Crises.* Washington D.C.: United States Institute of Peace Press.

Khan, A. M. (1964). *The Pakistan-American Alliance: Stresses and Strains.* New York: Council on Foreign Relations.

Khan, M. T. (2013). *The Social, Political and Economic Effects of the War on Terror: Pakistan 2009 to 2011.* Retrieved from, National Defence University:https://www.ndu.edu.pk/issra/issra_pub/articles/issra-paper/ISSRA_Papers_Vol5_IssueI_2013/04-Policy-Paper-Tariq-Khan.pdf

Lotze, W., & Williams, P. D. (2016, May 10). *The Surge to Stabilize: Lessons for the UN from the AU's Experience in Somalia.* Retrieved from International Peace Institute: https://www.ipinst.org/2016/05/un-au-stabilize-somalia

n.a. (2007, December 18). *Peacekeeping Best Practices.* Retrieved from https://www.un.org/en/ga/search/view_doc.asp?symbol=A/62/593

Report of The Independent Inquiry into the Actions of the United Nations during the 1994 Genocide in Rwanda [S/1999/1257]. (1999, December 16). Retrieved from United Nations Peacekeeping: https://www.un.org/en/ga/search/view_doc.asp?symbol=S/1999/1257

Resolution 1772. United Nations Security Council. (2007, August 20). Retrieved from: https://undocs.org/S/RES/1772(2007)

Schanbel, A., & Thakur, R. (eds.). (2001). *Cascading Generations of Peacekeeping: Across the Mogadishu line to Kosovo and Timor.* Tokyo: United Nations University Press.

United Nations Peacekeeping Resource Hub. (2019). Retrieved from http://research.un.org/en/peacekeeping-community/Training

Establishment of UN Cyber Peacekeeping Force: Prospects and Challenges

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Fahad Nabeel [1]

Abstract

With the emergence of cyberspace as the fifth domain of warfare, the prospects of cyber conflicts have increased significantly. Around 300 state-sponsored cyber operations have been conducted since 2005. The future uncertainty of cyber-warfare has prompted calls for necessary measures to regulate the actions of states in cyberspace. In this regard, cyber peacekeeping has also emerged as a significant research area to distinctively deal with the cyber component of future conflicts. Although, a number of challenges exist regarding materialization of full fledge cyber peacekeeping force, it can be easily integrated into the current United Nations (UN) peacekeeping organizational structure. In legal terms, operationalization of cyber peacekeeping *force* will depend on the mandate of peace operations approved by the UN Security Council (UNSC). This paper discusses the challenges confronting the creation of a cyber peacekeeping force and also offers recommendations by presenting a general framework regarding how such a force can be operationalized. Despite the fact that a dedicated cyber peacekeeping force seems a far sighted idea in present times, a distinct cyber unit can certainly be formed and integrated into UN peace operations in near future.

Keywords

Cyber peacekeeping, cyber-security, cyber-warfare, United Nations, UN Peacekeeping

Introduction

For over a period of decade, cyberspace has evolved as the fifth domain of warfare. The weaponization of cyberspace in recent years has emerged as a key tool in transforming the nature of inter-state hostility. The United States (US) was responsible for pre-emptively cutting off Iraqi computer networks and internet grid before its invasion of the country in March, 2003 (e.g., Nabeel, 2019). Similarly, clear instances of the use of cyberspace as an arena for war were evident when Russia-based hackers were involved in deploying of cyber-attacks against Estonia in April, 2007 and Georgia in 2008. These incidents were regarded by several experts as the first events in history whereby cyber-warfare coincided with actual military action(s) (Markoff, 2008).

In the Middle East, Israel hacked into Syrian air defense systems in September, 2007 to blind the latter while Israeli jets were involved in the bombing of a suspected nuclear site in Diaya-al-Sahar. Under Obama administration, a joint US-Israel cyber-attack was launched, known as 'Operation Olympic Games', in which

[1] *Fahad Nabeel* works as a Senior Research Associate at the Centre for Strategic and Contemporary Research (CSCR), Islamabad.
E-mail: fahad.n@cscr.pk

Stuxent, a sophisticated malware, was employed to temporarily shut down Iranian nuclear facility at Natanz. Similarly, in order to sabotage test launches of North Korean missile program, President Obama ordered cyber-attacks against North Korea in early 2014 (Nabeel, 2019). David Sanger (2018) in his book claimed that at least 200 state-on-state cyber-attacks had been carried out by early 2018. However, the 'Council on Foreign Relations' Cyber Operations Tracker' documented at least 313 publicly known state-sponsored incidents which had occurred since 2005. With the increasing trend of cyber-attacks, scholars remain skeptic about the breakout of a cyber conflicts. The probability of cyber conflicts is meant to increase given the pace of states in equipping themselves with offensive and defensive cyber capabilities. Currently, more than 30 states have the capability to launch cyber-attacks.

Due to rising future uncertainty of cyber weapons and how they might impact the international security landscape, there has been an increasing demand for an *International-Level Cyber-Security Regime* which can regulate the activities of states in the realm of cyberspace. A number of proposals have been put forward in the past few years in this regard. One such proposal is that of establishing a UN cyber peacekeeping force. Earliest researches on the subject of cyber peacekeeping can be traced to at least July, 2002. At that time, Thomas P. Cahill, Konstantin Rozinov and Christopher Mule identified peacekeeping as a significant future research area. By examining the existing UN peacekeeping principles, the three scholars proposed as to how the peacekeeping principles can be applied in the cyber domain (Cahill, Rozinov, & Mule, 2003).

Considering the increasing tendency of conflict and crisis situation with a cyber-component and the deployment of complex peace operations, Kleffner and Dinniss (2013) raised the possibility that in near future, peacekeepers will find themselves in missions where they will encounter cyber incidents during, following or even in the absence of conventional hostilities. Their futuristic assumption was based on the rapidly accelerating weaponization of cyberspace in the past few years as a part of inter-state hostility. While raising the possibility of cyber component in future peacekeeping operations, Kleffner and Harrison believed that the future inclusion of cyber component in UN peacekeeping operation will largely depend on the type of operation and its constituting mandate.

The primary focus of this research is hence, to examine the prospects and challenges of establishing a UN cyber peacekeeping force. In addition, challenges towards establishment of a peacekeeping force are addressed and recommendations are provided in this regard. Thereafter, conceptualization of cyber peacekeepers in peace operations is analyzed through a legal framework. To the end, the initiatives taken by the UN regarding cyber peacekeeping and a model framework is presented in order to explicate *how* the UN should proceed in future when considering the establishment of a cyber peacekeeping force.

Defining Cyber Peacekeeping

In simple words, cyber peacekeeping is analogous to physical peacekeeping. But unlike physical space, cyber peacekeepers are deployed singularly for cyberspace alone. Robinson and colleagues (2018) define cyber peacekeeping as; "The application of cyber capability to preserve peace, however fragile, where fighting has been halted and to assist in implementing agreements achieved by the peacemakers." They further argue that cyber peacekeeper is an *'*individual performing cyber peacekeeping activities*'* (p.

5).Various scholars and experts have explained the potential roles of cyber peacekeepers. For instance, Phneah (2012) explains the role of cyber peacekeepers as: "To define, observe and legislate to maximum compliance, and provide regulatory recommendations to improve existing laws to curb and minimize breaches."

Contrarily, Kleffner and Dinniss (2013) explain that cyber peacekeepers should the ability to "prepare the battle space, neutralize networks and uncover and obtain documentary evidence will be useful tools in carrying out particular operations […]". On the other hand, Dorn (2017) elaborates in detail cyber peacekeepers "could investigate major cyber-attacks and hacking events. They could help contain conflict between nations (and potentially between other conflict parties as well), prevent escalation of cyberwars, and help catch global cybercriminals." While keeping the above discussion in view, several major and critical tasks have been identified by scholars and experts for cyber peacekeepers, which include:

- monitoring for actions in cyberspace that violate peace agreements;
- monitoring changes in network structures;
- cybersecurity dispositions and network traffic,
- monitoring human rights abuses occurring in cyberspace;
- verifying compliance with cyber terms;
- creation of a cyber buffer zone;[2]
- disarmament of cyber weapons;
- demobilization of cyber combatants;
- reintegrating of cyber ex-combatants towards sustainable livelihoods;
- reforming cyber aspects of security sector;
- offering electoral assistance by providing protection against hard and soft cyber-attacks;
- provision of malware education and coordinating emergency malware response teams;
- ensuring cyber peacekeeping activities do not violate human rights
- promotion of human rights in cyberspace;
- bringing value to the restoration and extension of state authority only if state cyber dependence is moderate or high;
- monitoring the vague 'digital borders/boundaries';
- prevention or warning of impending cyber- attacks;
- investigating cyber-attacks;
- mediating between conflicting parties by either finding acceptable terms for 'cyber ceasefires' or developing 'cyber peace agreements' for ending cyber conflicts;
- overseeing safe layers for netizens (Internet users) for cyberspace freed from viruses and attackers;

[2] Robinson et al. (2018), define cyber buffer zone as 'a network or site that is protected and monitored by peacekeeping forces, where cyber-attacks have been excluded.'

- overseeing 'safe areas' (secure, well-guarded servers or domains),
- offering software fixes to parties affected by ransom-ware or website attacks;
- removing dormant malicious software activated by unwitting users or cyber weapons;
- assisting with national cyber infrastructure development;
- educating national cyber officials;
- bringing more order to weakly governed global cyberspace by promoting regulation of states activity;
- assisting the establishment of a new cyber norms and international cyber agreements.

Challenges

Experts on cyberspace and its usage as a potential arena for war opine that raising a virtual peacekeeping force is more challenging. Thus there have been major criticism on the very idea of establishing the force. The concerns, objections and criticisms are discussed in the following sections. The discussion will also contain recommendations as to how to overcome these challenges.

Insufficient Capabilities, Expertise and the Role of Cyber-Powers

Currently, the UN does not have sufficient capabilities and expertise to deploy a cyber peacekeeping force. In-depth knowledge of sophisticated viruses, spear phishing schemes, the 'dark web' and national cyber-warfare capabilities are key components which will be required for creating a cyber peacekeeping force. However, it is important to acknowledge that the UN lacks these components. At present, in order to overcome this gap, states should ensure the provision of necessary capabilities and expertise to their cyber experts. However, transferring of capabilities and expertise by states might prove challenging as states grapple with the question of impartiality or adopting narrow minded thinking under the disguise of national interests. In addition, states are themselves in need of cyber-experts. It is already estimated that there will be 3.5 million vacant cybersecurity roles, in future. Nevertheless, in the longer run, an international cybersecurity regime will be needed in order to regulate the growing activities of states in the cyberspace (Dorn, 2017).

Although cyber peacekeeping was identified as a future research area nearly two decades ago, but the concept still remains rather nascent. A brief review of exiting literature on the phenomenon of 'cyber peacekeeping' reveals a limited ongoing debate. (Consequently), some scholars believe that cyber peacekeeping is still a new concept and need some time to be developed before being completely operationalized (e.g., Dorn, 2017). The main reason why major cyber powers including the United States, China and Russia would not endorse the creation of a UN cyber peacekeeping force, is mainly because of security and confidentiality concerns and related issues. Nevertheless, Dorn (2017) believes that few states might allow for UN-led investigation of cyber-attacks on case-by-case basis where they emerge as vindicated (Dorn, 2017).

Redundant Measure

Some experts are of the opinion that establishing a cyber peacekeeping force will be a redundant measure because existing peacekeeping mechanisms include efforts to deal with cyber-attacks in the form of inter-government cooperation to curb web breaches and will add to expenditures (e.g., Phneah, 2012). However, a review of recent international efforts undertaken to minimize cyber warfare threats have resulted in certain measures. For instance, the UN Group of Governmental Experts (GGE) mechanism broke down following the disagreements on the new report regarding cyber norms in 2017. In November 2018, General Assembly passed two resolutions for establishing Russian-sponsored open-ended working group and the United States-sponsored GGE for regulating actions of states in the cyberspace. Experts believe that dividing the efforts for formulating norms into two groups will result in further complicating the already practiced international efforts for the formulation of cyber norms (Grigsby, 2018; Nabeel, 2019).

Lack of Clarity in Physical or Visible Battlefield

The question of how the cyber peacekeeping force will be able to distinguish physical or visible battlefield from the rest of cyberspace has garnered significant attention over the years and has been extensively debated upon by the experts on the subject (Dorn, 2017; Phneah, 2012). Unlike physical territorial boundaries, there are no territorial boundaries in cyberspace. Such argument should not prevent the establishment of cyber peacekeeping force because nature of cyber warfare is itself uncertain and not fully comprehended (Robinson et al., 2018).

Unavailability of Legal Framework

A number of legal issues have been raised and will continue to emerge in future regarding the conduct of cyber peacekeeping force. As of present times there is no proper mechanism which can decide as to which cyber-attacks can be constituted as acts of war and otherwise (Phneah, 2012; Robinson et al., 2018). In case the threshold of armed conflict is crossed, the peacekeepers involved as part of the peace operation become a party to the armed conflict. This situation opens a number of challenges. First is the question of who will be party of the armed conflict? (i.e., troop-contributing state, or any responsible international organization like the UN, North Atlantic Treaty Organization, African Union or both). Second comes the concerns regarding the duration for which the peacekeepers remain party to armed conflict.

However, these legal hurdles can be resolved by addressing the aforementioned issues on case-by-case basis, while factoring in the operationalization of the mandate for the specific operation within the existing environment. In this regard, factors such as; relevant UNSC resolutions, specific operational mandates, adopted roles and practices by the peacekeepers, rules of engagement and operational orders, nature of armaments used by peacekeepers, interaction between the peacekeepers and conflicting parties, and conduct of the alleged victims and their fellow personnel, shall help in determining the nature of engagement for peacekeepers once the threshold of armed conflict is crossed.

Perspective on International Law

From an international legal perspective, it is purview of the UNSC to decide whether cyber-operations (either in a specific situation or as a more general concept) amount to threating international peace and security under *Article 39* of the UN Charter which

states that; "The Security Council shall determine the existence of any threat to the peace, breach of the peace, or act of aggression and shall make recommendations, or decide what measures shall be taken in accordance with Articles 41 and 42, to maintain or restore international peace and security monitoring the vague 'digital borders/boundaries" (UN Charter Article 39).

However, when cyber operations are to be carried out in the context of peace operations under the threshold of an armed conflict, then such operations are also subject to human rights law. In this regard, the UN General Assembly passed a historically unanimous *Resolution 68/167* which stated that the rights held by people offline must also be protected online. The Resolution also urged states to respect and protect the privacy in digital communication (Resolution/68/167, 2014).

The law of armed conflict can only be applicable for peace operations if the threshold of armed conflict is crossed. In other words, if cyber infrastructure or data is interfered with the objective to gather intelligence, preventing 'spoilers' from reigniting armed conflict or prevention of online postings reflecting racial hatred, it should be in accordance with human rights law provisions such as the right to privacy, freedom of expression, fear of association, etc. The mandate of peacekeeping varies from monitoring a peace agreement or ceasefire to protection of civilians, creating a safe and secure environment, while also training both civilians and armed forces (Kleffner & Dinniss, 2013). In this regard, the UNSC can also mandate non-forceful measures as a part of *Article 41* of the UN Charter for situations which it deems to as a threat to peace, breach of the peace or act of aggression. The *Article 41* states that (UN Charter Article 41); "The Security Council may decide what measures not involving the use of armed force are to be employed to give effect to its decisions, and it may call upon the Members of the United Nations to apply such measures. These may include complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication, (emphasis added by the author) and the severance of diplomatic relations."

However, it is important to remain cognizant of the fact that not all cyber operations can be treated alike. The cyber operations which would amount to a use of force will not mandated by *Article 41*. Determination of whether a cyber operation amounts to a use of force or not, is explained in the following sub-section. In case individual members of a peace operation participated directly in hostilities will require a case-based assessment(s) to establish the required threshold of harms, causation and belligerent nexus. It will be fairly exceptional to think about the possibility of the operations in which peacekeepers and sole adversary are engaged in hostilities. Such a situation can arise only in case peacekeepers are deployed in an ongoing armed conflict and into a volatile situation that ultimately deteriorates, transforming into an armed conflict. In such operations, peacekeepers cannot conduct military operations, be it through cyber means or otherwise, because they are not subject to the law of armed conflict. As discussed earlier, conducting operations sanctioned by law of armed conflict require that peace operation is party to the armed conflict.

Meanwhile, law of occupation is applied to peace operations in certain circumstances, it does not imply that use of cyber operations by peace operation to project the execution of its mandate in those areas which are not under its physical control. In such a scenario, it will result in extending the applicability of the law of the occupation to those areas which have been targeted by cyber operations, for example for monitoring communications. This is because the use of cyber operation by

occupying state to exercising her authority will not be sufficient on its own to establish an occupation. A territory is only considered to be occupied only when it is placed under the authority of the occupying force. The law of occupation is extended only to the territory were the authority of occupying force has been established and can be exercised (Kleffner & Dinniss, 2013).

Conceptualizing Deployment of Cyber Peacekeepers

Scenario A: Peacekeepers Deployed in a Region Marred by Offensive Cyber Operations

If peacekeepers are deployed in a situation where there are ongoing cyber operations between third parties, which can either be state-backed or non-state actors, then any response mechanism will depend on the mandate of the peace operation. However, it is imperative that peacekeepers will be authorized to monitor and conduct cyber operations in response to cyber threats. In this regard, any response will depend on four main factors;

(i) mission's capabilities and resources;
(ii) ensuring that response mechanism does not contravene; human rights law;
(iii) robustness of the mandate;
(iv) level of the cyber threat.

Considering a security situation which contains a cyber element, the UNSC sanctions a peace operation there without explicitly allowing the use of cyber operations for responding to incoming cyber threats, then the generic operational mandate will be interpreted broadly to include the monitoring of internet traffic in addition to monitoring of physical space. For monitoring of computer networks, there is need to first formulate a planning stage wherein cyber peacekeepers consult with local staff to build an overall picture of the networks, understanding the expected information to be flowing in and out and learn about any existing monitoring solutions (Robinson et al., 2019).

However, the permissible methods for monitoring internet traffic might differ. For example, all incoming and outgoing data traffic of mission's networks can be monitored as a matter of good network security. But the monitoring of data traffic of networks beyond the mission's own networks through technologies like Deep Packet Inspection (DPI)[3] will depend on whether the applicable law permits any such level of surveillance. However, conducting DPI will raise the issues related to privacy and freedom of expression (Kleffner & Dinniss, 2013). It is pertinent to mention here that right to privacy and freedom of expression are not absolute rights.

Article 19(3)(b) of International Covenant on Civil and Political Rights (ICCPR) states that certain interferences with the right of freedom of expression is permissible in case of protection of national security or of public order, or of public health or morals. But such exceptions are subject to proportionality requirements. On the other hand, *Article 17* of ICCPR which is related to right to privacy does not explicit mention

[3] The technology which allows looking into the content of the data packets that are used to transmit or receive information that is in the process of being transmitted.

reference to exceptions based on national security and public order but it allows for such exceptions conditional to the interference in an individual's privacy is neither arbitrary nor unlawful (International Covenant on Civil and Political Rights, 1966).

Therefore, while formulating mechanism for the use of DPI technology, it should be ensured that interference with rights given under human rights law is only for legitimate purposes. While considering the fact that troop contributing countries have different perspectives and approaches regarding the use of DPI technologies, it is important that rules related to permissible limits to the use of DPI and other Internet surveillance technologies should be clearly drafted.

In case of the applicability of law of armed conflict for a peace operation, the situation will alter drastically. Although human rights law will continue to be applied, the law of armed conflict permits the employment of those measures which are necessary for obtaining information about the enemy in order to meet required precautions in an attack. Such provisions of law of armed conflicts would prevail over the more generic conflicting rules of human rights law (Kleffner & Dinniss, 2013).

Scenario B: Offensive Cyber Operations Targeting UN Peace Operation

Since 2005, at least five cyber operations have been conducted against various UN entities, however, no publically known cyber-attack has been conducted against UN peace operations (Council on Foreign Relations, n.d.). While the possibility of future cyber-attacks against the peace operations cannot be ruled out completely, the UN peace operations should be prepared to chalk out mechanism to respond to cyber-attacks which either threaten the UN personnel or interfere in the implementation of peace operation's mandate. The principles of necessity and proportionality need to be factored in while formulating any response mechanism (Kleffner & Dinniss, 2013).

The Just War Theory[4] is also a mechanism which can be utilized while formulating defensive mechanism against offensive cyber operations (Dorn, 2017). In case of a cyber-attack which either result in causing physical harm to UN personnel or cause loss of functionality by damaging property and equipment, use of force can be exercised for self-defense to such an extent that it complies with the principles of necessity and proportionality. The use of force will also be allowed in case a cyber-attack which obstructs the ability of a peace operation in performing its mission by compromising its command and control systems.

In the cyber domain, attributing the origin of a cyber-attack or distinguishing cyber-attacks from cyber vandalism continue to be complicated topics. However, a peace operation will not face any such issues. Irrespective of the origin of the cyber-attack, the peace operation will continue to respond through self-defense or defense of the mandate. In this regard, the UN needs to play an important role in establishing an institution or mechanism to identify the perpetrators behind cyber-attacks. Various proposals like Digital Geneva Convention or an internationally recognized international cyber court have been proposed in recent times. However, if UNSC mandates a peace operation to maintain law and order, then peacekeepers can resort to

[4] The Just War Theory consists of (parameters): Just cause (Defense of self or others against cyberattack); Legitimate authority (the UNSC); Right intent (defense and justice); Proportionality (responsive action in proportion to the threat or the magnitude of the original attack); Net benefit (The positive repercussions outweigh the negative ones); Right Conduct (according to a well codified set of "cyber rules of engagement").

employment of all available means for the implementation of the mandate (Kleffner & Dinniss, 2013; Nabeel, 2019).

Scenario C: Offensive Cyber Operations Targeting Civilians in UN Peace Operation's area of Responsibility

If civilians are threatened by cyber operations, then peacekeepers are mandated to resort to use of force for protection of civilians from the imminent threat of physical danger. However, in case where the imminent threat cannot be established, then it is important to know that the interpretation and operationalization of the term 'imminence' is largely dependent on the collective consensus of the political leaders, UN departments, the UN force commander and national contingent commanders.

However, it is important to understand that use of force is not the only available option to deal with cyber threats. The threats emanating from cyber domain can be dealt with through technological means such as diverting a Distributed Denial of Service (DDOS) attack stream or blocking a port. Similarly, the mandate to protect civilians is expressed in terms of 'to the extent possible' and 'within mission capabilities'. The UN-approved peace operations possess limited technological capacity for intelligence and information analysis and may not be technologically capable of preventing cyber operations from impacting the civilians. As a mediating party, cyber peacekeepers can utilize mechanism of persuasion or coercion to bring adversaries to the negotiating table.

Additionally, cyber peacekeepers can marshal support from international community and cyberspace stakeholders as a mediating mean (Akatyev & James, 2015). However, if the engagement between peace operation and a State or organized crime reaches such a level of hostility which equalizes the level of conflict, then law of armed conflict is applicable in such a scenario. In this scenario, the right to respond to cyber operation will not remain restricted to self-defense. Peacekeepers will be allowed to lawfully target members of adversary force and their equipment. Likewise, military personnel and the equipment of the peace operation will become lawful targets for other parties of the armed conflict (e.g., Kleffner & Dinniss, 2013).

Scenario D: Peacekeepers Employing Offensive Cyber Operations against Adversaries

As discussed earlier, no publically known cyber operation has ever been conducted against UN peace operation. Similarly, no public cyber operation has ever been conducted by a peace operation (Council on Foreign Relations, n.d.). The 2012 American claim of using cyber operations successfully in Afghanistan cannot be established to be conducted under the auspices of the UN-mandated, NATO-led International Security Assistance Force because of the dual nature of American presence in a war-torn country (Satter, 2012).

For a peace operation likely to be involved in transition phase of reconstruction and development efforts, the ability to turn off a network rather than destroying one might prove to be a more useful tool. Offensive cyber operations will prove advantageous to the UN mission for a number of reasons. Firstly, it may also allow UN peace mission to project its mandate in regions which are beyond its area of deployment and otherwise lacks capabilities to reach those regions. Secondly, cyber operations can be utilized for intelligence and monitoring activities. Thirdly, offensive operations provide peacekeepers with the ability to remotely shut down the networks of opposing actors. This will prove significant in paving a way to disrupt the activities

of those who threaten the peace process. Fourthly, offensive cyber operations can also be used as a coercive method in influencing actors involved in peace process.

Fifthly, offensive cyber operations can be undertaken to either remove or blocking online content which incites to commit crimes such as genocide or certain other forms of hate speech. This can only be done if the mandate authorizes any such action. Sixthly, neutralization of command and control networks and air defense networks might prove as a valuable tool for peace operations. However, the legality of neutralizing (not destroying) a network depends on the categorization of the acts and the operation's mandate. The notion whether mere neutralization of a network by cyber means would amount to an attack under the laws of armed conflict has been subject to extensive debate. According to Tallinn Manual, targeting of networks would be considered an attack only if destruction of the functionality of objects, to include network components, results in physical replacement of a component (Tallinn Manual 105–110). However, the Manual failed to gain wider support and/or recognition (Kleffner & Dinniss, 2013; Nabeel, 2019).

In order to neutralize computers operating outside the area of operations, assistance can be requested from other member states to ensure that their nationals, individuals and firms within their territories refrain from particular offensive behaviors and punish those who engage in such activities. In addition, the peace operation with the support of Internet Service Providers or webhosts, who are based in the geographical area of the peace operation, could either block or redirect the DDoS traffic emanating from particular Internet Protocol (IP) addresses.

Lastly, offensive cyber operations are to be used for non-self-defense circumstances only if authorized by the operation's mandate. In the fulfilment of mission objectives, offensive cyber operations are authorized to cause damage, destruction or physical harm in the same fashion as the kinetic force would be able to do. Similarly, when peacekeepers find themselves involved in hostile engagements under the laws of armed conflict, offensive cyber operations can be deployed in the pursuit of the military objectives (Kleffner & Dinniss, 2013).

Prospects of Establishing UN Cyber Peacekeeping Force

The UN is already deliberating on the term 'digital peacekeeper' which can be defined as a physical peacekeeper (military, police, or civilian), who is equipped with advanced digital equipment to view physical space in conflict zones. Realizing the threats emanating from cyberspace such as cyber-attacks and cyber espionage, the UN is now slowly developing the necessary cyber infrastructure and procedures to protect sensitive information (mission-related information and information about peace operation's adversaries) by preventing break-ins.

The establishment of 'Digital Blue Helmets (DBH)' (analogous to physical UN peacekeepers wearing blue helmets) is viewed by experts as an indicative factor showing that UN sees for itself a future role in cyber peacekeeping (e.g., Dorn, 2017). DBH programme proposed a three-tier cybersecurity monitoring mechanism with main 'Global Cybersecurity Monitoring Centre' located in New York. In addition to main monitoring center, there will be regional and non-regional monitoring centers (United Nations Office of Information and Communications Technology, n.d.).

Meanwhile, the UN is exploring its potential role in preventing terrorism in cyberspace. In this regard, the 'UN Counter Terrorism Centre' has plans to help requesting member states to be better capable for preventing terrorist cyber-attacks and

mitigating the effects and expediting recovery following the attacks (Dorn, 2017). The UNDPKO is already a part of the associated UN's 'Counter Terrorism Implementation Task Force', which was established in 2005.

In 2013, Chief Executives Board for Coordination adopted seven principles for dealing with cybercrime and cyber security. The seven cyber pillars reflect a UN-system-wide effort to encourage UN programs in helping member states in addressing their cybercrime and cybersecurity needs and take evidence-based action (United Nations System, 2014).[5] However, all UN efforts in dealing with cyberterrorism and cyber-warfare are in preliminary stages. Experts believe that UN will not be undertaking new roles in regulating activities of states in cyberspace until and unless asked by member states (as cited in Dorn, 2017).

General Framework for Operationalizing Cyber Peacekeeping Force

The existing literature on cyber peacekeeping has touched upon various aspects of how cyber peacekeepers can undertake the tasks discussed earlier such as creation of cyber buffer zone and implementing observation, monitoring and reporting mechanism. In continuation to the existing knowledge, a brief general framework is presented in this section regarding the operationalization of a future cyber peacekeeping force.

Formulation of Working Modus Operandi

The UN can arrange various sessions (or constitute a GGE) in which government officials, tech companies, non-profit organizations, academia, etc., are informed regarding the requirements of such force. These sessions will serve as the ground work for peacekeeping force which ultimate lead to the materialization of a fully capable force. Some major questions which the UN can put forward during the sessions are;

- What should be the total strength needed for peacekeeping force?
- How future cyber peacekeepers should be inducted?
- How civilian peacekeepers can join the peacekeeping force?
- How countries will contribute to the force other than personnel? What type of expertise and capabilities will shared by each member state?
- How cyber peacekeeping force will be funded?
- How to ensure better gender representation in the force?
- How to prevent sexual violence related incidents within the force?
- What guidelines should be formulated to regulate behavior of cyber peacekeepers?

[5] The seven cyber pillars: (1) Cyber incidents should be dealt with in a holistic manner through criminal justice and international cooperation, (2) UN entities should aim to respond to cybercrime and cybersecurity needs in member states within their respective mandates, (3) All UN programming should respect the principles of the rule of law and human rights. (4) UN programming should focus on assisting member states to take evidence-based action, (5) Programming should foster a "whole-of-government" response, (6) Support to member states should aim to strengthen international cooperation, (7) Programming should include efforts to strengthen cooperation between government institutions and private sector enterprises.

- What mechanism should be in place to ensure that cyber peacekeeping force does not become a victim of insider attacks?
- How to bring the good working relationship of physical peacekeepers into cyber peacekeepers?
- What framework should be adopted to investigate cyber-attacks and preventing leakage of sensitive information?
- How transparency should be maintained in the working modus operandi of peacekeeping force?

Building the Cyber Peacekeeping Force

There are at least four main sources which can contribute cyber-experts for the cyber peacekeeping force;

(i) ***Troop Contributing Countries*****:** A major chunk of cyber-experts will be drawn from UN member states. Unlike physical UN peacekeeping force strength, the major portion of cyber-experts will be drawn from developed countries which have enhanced their cyber capabilities in recent years and have qualified cyber-experts to offer. These cyber-experts will be from both military and police of contributing countries;

(ii) ***Cyber Contributing Organizations*****:** Organizations like tech companies can offer their cyber-experts on periodic basic to the force;

(iii) ***Volunteers*****:** A significant portion of cyber-experts can be drawn as civilian peacekeepers who volunteers their time for the force. These peacekeepers can range from independent cyber-experts to academicians.

(iv) ***UN Cyber Staff*****:** For the smooth operational working of cyber peacekeeping force, it is important to have a dedicated full time UN staff. These officials will mainly be responsible for administration and coordination related tasks (Robinson et al., 2018).

Locating Cyber Peacekeeping Force and Virtual Collaborative Environment (VCE)

The cyber peacekeeping force can easily be embedded in the current hierarchical structure of UN peacekeeping. Instead of segregating cyber-experts into military, police and civilian peacekeepers, it is ideal to combine all those experts into a dedicated and distinct cyber unit. With regards, defined as digital spaces where remotely located people can come together and interact with each other and with virtual objects, Robinson and colleagues (2018) proposed adoption of such mechanism for cyber peacekeeping force with four pre-requisite. They suggest that the VCE should be able to; cater to both small and large scale cyber peacekeeping activities; reliable in the sense that it can accept concurrent users with no failures of availability; secure since it will be containing sensitive information; and, contain resource sharing component, voice over Internet Protocol and reporting system.

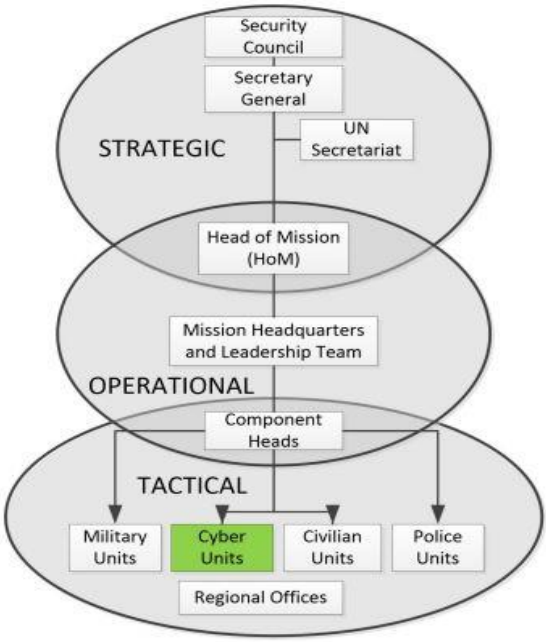

Figure 1: Proposed UN Peacekeeping Organizational Structure (Robinson, et al., 2018)

Conclusion

In years to come, cyber operations are likely to be directed at UN peace operations or used by peace-keeping operations in the implementation of their mandates. However, creation of full fledge UN cyber peacekeeping force seems a far-sighted idea at this point in time. What is more likely to occur in the near future is addition of unit comprising cyber-experts from troop contributing countries, tech companies, non-profit organization, volunteers to UN peace operations, which will be utilized for both offensive and defensive cyber operations.

Prior to formulation of such a dedicated unit or force, it is important to address all the underlying legal hurdles regarding the conduct of such a unit or force. Similarly, the jurisdiction of this unit or force should be clearly mentioned in the peace operation's mandate as authorized by UNSC so as to not leave any form of ambiguity. On the other hand, it is important for organizations involved in peacekeeping efforts to create awareness about cyber threats and assist other organizations in undertaking measures to secure themselves from cyber-attacks.

While debating about the feasibility of a cyber peacekeeping force continues, it is important for all major stakeholders; governments, non-profit organizations, tech companies and academia to create awareness among the users about the threats emanating from cyberspace. This awareness campaign and subsequent citizen actions can alone contribute in resolving about 80 per cent of daily cybersecurity threats (e.g., Sanger, 2018). Apart from awareness initiatives, efforts should also be undertaken by major stakeholders for formulating legal frameworks based on punishing

cybercriminals and similar offenders and ensuring measures for cybersecurity i.e. defending critical infrastructure and key commercial enterprises.

References

Akatyev, N., & James, J. I. (2015, October). Cyber peacekeeping. In *International Conference on Digital Forensics and Cyber Crime* (pp. 126-139). Springer. Retrieved from https://www.researchgate.net/profile/Joshua_I_James/publication/300144087CyberPeacekeeping/links/5721741608ae82260fab44b6/Cyber Peacekeeping.pdf.

Cahill, T. P., Rozinov, K. & Mule, C. (2003). Cyber Warfare Peacekeeping. *Proceedings of the 2003 IEEE Workshop on Information Assurance*. Retrieved from https://ieeexplore.ieee.org/document/1232407.

Council on Foreign Relations (n.d.). Cyber Operations Tracker. *Council on Foreign Relations*. Retrieved from https://www.cfr.org/interactive/cyber-operations.

Dorn, W. (2017). Cyberpeacekeeping: A New Role for the United Nations. *Georgetown Journal of International Affairs* 18, 138.

Dorn, A. W., & Webb, S. (2019). Cyberpeacekeeping: New Ways to Prevent and Manage Cyberattacks. *International Journal of Cyber Warfare and Terrorism (IJCWT)*, *9*(1), 19-30.

Grisby, A. (2018, November 15). The United Nations Doubles its Workload on Cyber Norms, and Not Everyone is Pleased. *Council on Foreign Relations*. Retrieved from https://www.cfr.org/blog/united-nations-doubles-its-workload-cyber-norms-and-not-everyone-pleased.

International Covenant on Civil and Political Rights. (1966). *International Covenant on Civil and Political Rights, G.A. Res. 2200A (XXI), U.N. Doc. A/6316* (Dec. 16, 1966), 999 U.N.T.S. 171.

Kleffner, J. K. and Dinniss, H. A. H., (2013). Keeping the Cyber Peace: International Legal Aspects of Cyber Activities in Peace Operations. *International Law Studies*, *89*, 512-535. Retrieved from https://digital-commons.usnwc.edu/ils/vol89/iss1/4/.

Markoff, J. (2008, August 12). Before the Gunfire, Cyberattacks. *New York Times*. Retrieved from https://www.nytimes.com/2008/08/13/technology/13cyber.html.

Nabeel, F. (2019). International Cyber Regime: A Comparative Analysis of the US-China-Russia Approaches. *Stratagem*, *1*(2), 8-27. Retrieved from https://journal.cscr.pk/stratagem/index.php/stratagem/article/view/22.

Phneah, E. (2012, February 6). Idea of Cyber Peacekeepers Premature, 'Redundant'. *ZDNet.* Retrieved from https://www.zdnet.com/article/idea-of-cyber-peacekeepers-premature-redundant/.

Robinson, M., Jones, K., Janicke, H., & Maglaras, L. (2018). An Introduction to Cyber Peacekeeping. *Journal of Network and Computer Applications*, *114*, 70-87.

Robinson, M., Jones, K., Janicke, H., & Maglaras, L. (2019). Developing Cyber Peacekeeping: Observation, Monitoring and Reporting. *Government Information Quarterly*, *36*(2), 276-293.

Sanger, D. E. (2018). *The Perfect Weapon: War, Sabotage, and Fear in the Cyber Age*. USA: Crown Publishing Group.

Satter, R. (2012, August 24). US General Says His Forces Carried Out Cyberattacks on Opponents in Afghanistan. *Associated Press*. Retrieved from http://seattletimes.com/html/nationworld/2018983462_apusafghancyberattacks.html.

Tallinn Manual, supra note 24, at 105–110.

United Nations Charter Article 39.

United Nations Charter Article 41.

United Nations (2013). 68/167. The Right to Privacy in the Digital Age. United Nations General Assembly 68th Session. Retrieved from https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/68/167

United Nations Office of Counter-Terrorism. (n.d.). Coordination and Coherence of the Counter-terrorism Efforts of the United Nations. *United Nations Office of Counter-Terrorism*. Retrieved from https://www.un.org/counterterrorism/ctitf/en/structure.

United Nations Office of Information and Communications Technology. (n.d.). Digital Blue Helmets. *United Nations Office of Information and Communications Technology*. Retrieved from https://unite.un.org/digitalbluehelmets/sites/unite.un.org.digitalbluehelmets/files/docs/digitalbluehelmets_brochure_final.pdf.

United Nations System. (2014, January 13). Chief Executives Board for Coordination, Summary of Conclusions, Second Regular Session of 2013. *United Nations System.* Retrieved from https://www.unsceb.org/CEB PublicFiles/Chief%20Executives%20Board % 20for% 20Coordination/Document/REP _CEB_201311_CEB2013-2.pdf

Managing Non-Traditional Threats by Using Space Technology: A Case Study of Pakistan

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Mahvish Malik[1] and Misbah Arif[2]

Abstract
Since 1957, the progression in space-based technology has opened more avenues for the peaceful application of space. Non-traditional threats originate from multiple sources of natural causes and affect a state's population and its relevant institutions. In this realm, satellites play a vital role in dealing with such threats. The South Asian region is also victim to traditional as well as non-traditional security threats. Similarly, Pakistan is facing numerous non-traditional threats which primarily threaten its socio-economic security. Such challenges are diverse including their spiral nature from one state to another specially with environmental hazards, water and food security and aggravating population growth with increasing social disparity over distribution of resources. Pakistan has signed many agreements in the field of peaceful uses of space technology. Pakistan's space program highlights the use of space technology in different domains including agriculture, health, education, disaster management, environment, climate change, land planning, coastal and marine resources, geology and mineral prospection. With the peaceful application of space technology, Pakistan is determined to enhance its national infrastructure and is ready to meet and curb the emerging non-traditional threats to its national security. With regards to the peaceful use of space and threat management, this paper discusses the areas wherein Pakistan is using space technology to deal with these threats and analysis the issue of space militarization.

Keywords
Space technology, SUPARCO, Pakistan, non-traditional threat, space militarization, Remote Sensing Satellite (RSS)

Introduction
The dynamic nature of national security has been evolving since Post-Cold War era. National security is aimed at defending borders, territorial integrity, sovereignty and population of a state against traditional and non-traditional security threats (e.g., Bailey, 2005). In the 21st century, the issue of national security expanded to the emerging challenges of the non-traditional security threats. The concept of traditional threats may refer as conventional threats particularly emerging against population and government

[1] *Mahvish Malik* is a Visiting Research Fellow at the South Asian Strategic Stability Institute (SASSI) Islamabad, Pakistan.
E-mail: malik.mahvish414@gmail.com
[2] *Misbah Arif* is a visiting lecturer at the Fatima Jinnah Women University (FJWU), Rawalpindi.
E-mail: misbaharif91@gmail.com

from other states' civil and military institutes. On the other hand, non-traditional threats originate from diverse sources of natural causes and affect the state's population, relevant institutions, and its security agenda (Bailey, 2005; Kicinger, 2004). Earlier, the traditional school of thought on national security focused on defining origin of threat perception for a particular state from respective opponent state only. However, by the passage of time, the additional concerning threats were recognized under non-traditional (a.k.a Copenhagen school), such as: military, societal, political, economy and environmental security. In this regard, the Copenhagen school of thought defines associated risks from environmental degradation as a future challenge for the world (Trombetta, 2006; Smith, 2017; Rucktäschel & Schuck, 2018; Pavlović, 2017).

The South Asian region is victim of many security threats arising from traditional as well as from non-traditional security threats. In addition to the above mentioned non-traditional threats, increasing population rate, illegal immigrants, poverty, social disparity, terrorism, arms trafficking, environmental hazards and illegal transfer of money are the extreme challenges in the region. On the whole, there is no model to follow in South Asia for effectively dealing with these challenges except to dedicate all states' efforts towards cooperative security mechanism in order to alleviate the aforementioned challenges in near future. In particular, the challenges related to water and food security have necessitated the countries to revisit their existing policies. Among other factors, there is a huge population that cannot afford high food prices due to their low income and food scarcity. Another issue is of insufficient distribution of resources among the regions and population, thus, adding to the challenges to socio-economic, socio-political and overall to human security.

The issue of health security has emerged yet another crucial problem within the context of South Asia. Evidently, a large segment of population is still living without clean drinking water and proper sanitation systems. Health security as an 'issue' was first recognized (as a security threat) when United Nations (UN) passed a resolution regarding AIDS; as a matter of human security. Particularly, in India there is a growing number each year of AIDS patients and it poses a threat to the broader region as well(Feldbaum et al., 2006; Elbe, 2006; UNAIDS, n.d.). In addition, the South Asian region is also facing grave nature of natural calamities that resulted in huge loss of human and economic resources. Such natural tragedies have caused growing number of floods, water scarcity, air pollution, increasing population etc. Further climatic and environmental variations can result in extreme weather changes, glaciers melting, floods and epidemics.

Pakistan is also affected by the aforementioned non-traditional security challenges in the region. Such challenges have led to serious implications on the country's economic progression and socio-political stability. Therefore, this paper argues that Pakistan needs to consider these challenges that can undoubtedly cause detrimental effects on socio-economic and environmental security. With regards, various studies have argued that, the hazardous effects of earthquakes, floods, droughts, storms and cyclones are aggravating in Pakistan. The 2005 earthquake can be considered as a reference point that caused 0.1 million deaths, inflicted devastation for 20 million people and suffered $5.2billion financial losses (e.g., Buttenheim, 2010; Hamilton & Halvorson, 2007). Besides, extreme weather changes and varying patterns in raining seasons have further impacted the agricultural productivity (i.e., food

insecurity). Issue of water security is yet another key challenge for Pakistan in terms of nontraditional security. In this vein, a well debated trans-boundary water sharing mechanism (Indus Water Treaty between India [upper riparian] and Pakistan [lower riparian]) has always been an issue of great contention between the two states; thus exposing the region to serious human security related consequences (Khalid, 2010; Hill, 2013; Miner et al., 2009). Therefore, above highlighted security threats in nontraditional domain are significant to be considered, at both societal and policy level, in order to ensure Pakistan's (internal) peace and stability. Here, international and regional cooperation has become more important than ever. Nevertheless, Pakistan has significantly progressed towards the peaceful application of space (via technological advancements) in order to address the country's non-traditional security threats.

Since the end of Cold War era, the progression in space-based technology has significantly created its relevance with regards to addressing the afore-detailed non-traditional threats; i.e., peaceful application of space. In doing so, former Soviet Union launched its first satellite in space 'Sputnik-1' in 1957; first official earth satellite (NASA, n.d.). United States pursued the same path and landed its first moon mission as Apollo Mission in 1969.[3] Following former Soviet Union and United States, various countries started their own space programs in order to be part of 'space' power hegemony (Peter, 2006).

Understanding the Applications of Remote Sensing Satellite (RSS)

The assessment and efficient evaluation of environmental studies have used the space expertise of remote sensing satellites around the world. With the help of remote sensing technology, the study of extreme weather changes and features of climate change have enhanced the capability of timely and effective responses. It has thus helped to improve the human and mechanical simulations to asses and mitigate the dangerous outcomes. Remote sensing technology is famously defined for assessing data related to any object or phenomena without any physical intervention or diversion (Jain & Singh, 2003; National Ocean Service, n.d.). This technology has been used in fields primarily related to geology and forestry. The most efficient use of the technology has been observed in studying the risk factors in order to provide the timely input for policy makers to address the forecasted challenge. The active remote sensors usually operate in a microwave portion for penetrating into an electromagnetic spectrum. Whereas the passive remote sensors deal with the infrared, thermal infrared and microwave potions for scanning the recorded data (NASA Earth Data, n.d.).

Furthermore, various studies have highlighted the importance of remote sensing in catastrophe controlling and mitigating measures in relations to environmental hazards. One of the major advantages of the Remote Sensing Satellite (RSS) is its ability to provide and access information before and after the natural disaster. First, in pre-disaster phase, RSS can be used to identify and develop system and resources before it occurs (Bello et al., 2013). It is aimed at ensuring that response to disaster is efficient and well managed. RSS has a capability to capture an image of a scattered land (land evaluation) that are usually beyond human reach. They can provide a high tech analysis with an option of retrieving data even after a long-period of time. With regards, digital terrain data is also used for hydrological and flood modelling

[3] For details regarding 1969 Moon Landing, please visit: https://www.history.com/topics/space-exploration/moon-landing-1969.m

(Vorovenchii, 2011).

Space Race, Technology and International Collaboration: The Case of Space Applications in Pakistan

In view of the above debate, Pakistan can also effectively work against averting the highly risked consequences from natural disasters with the advancements in technical and human resources. With regards to climate change, Pakistan needs to indigenously work for mapping the extreme changes and study its impact over the year. Then, an effective future strategy can be drawn to curb such challenges.

Pakistan's Space and Upper Atmosphere Research Commission (SUPARCO) was formed back in September 1961. SUPARCO works for the research and development of the peaceful application of the space technology. It is intended at advancement of socio-economic development of the country by using space for dealing with weather forecasting, remote sensing, natural disasters, mapping, environmental monitoring, climate changed, etc. In doing so, Pakistan first independent communication satellite was launched from a Chinese base (on July 16, 1990) followed by its geostationary satellite in 2002, named PakSat-1.[4] Later in 2010 with modifications, PakSAT-1 was replaced by satellite Pakat-1R. In addition, Pakistan also has multiple earth observational satellite, such as Badar-B. Pakistan is the first country to use China-based Global Positioning System (GPS) for civilian purposes (for the identification of accurate positioning, traffic monitoring, and other disaster relief measures).[5]

Considering Pakistan's collaboration at international level, the country has signed several MoUs and agreements related to the peaceful application of space with countries, such as China, European Union, France, Russia, Saudi Arabia, Syria, Thailand, UK, and the United States.[6] Pakistan has also ratified the UN General Assembly sponsored legal measures for the peaceful use of space, including: Outer Space Treaty (1967), Rescue Agreement (1968), Liability Convention (1972), Registration Convention (1975), and the Moon Agreement (1979).[7]

Moreover, SUPARCO is associated with various international institutions for conducting joint Research and Developments (R&Ds) in exploring peaceful applications of space. These R&Ds activities comprise on exchange of data, training, and organizing seminars and conferences on the space related activities. Pakistan is also an associate member of Asia-Oceania Space Weather Alliance (AOSWA). This regional platform encourages states to develop R&Ds with regards to weather related issues in Asia and Oceania region. AOSWA members exchanges both real-time and archived data for computer simulations, geomagnetic and ionospheric observations.[8]

SUPARCO is also a member of Inter-Program Coordination Team in Space Weather (ICTSW). This program aims to design collaboration between world's space services and meteorological organizations of different Western, Asian and European

[4] For details on the history of SUPARCO, please visit: http://www.suparco.gov.pk/pages/history.asp
[5] Ibid.
[6] For details on International Cooperation in the field of Space Sciences, please visit: http://www.suparco.gov.pk/pages/agreements.asp
[7] Ibid.
[8] For details on Asia-Oceania Space Weather Alliance, please visit: http://www.suparco.gov.pk/pages/aoswa.asp

countries. It helps to gather updated weather information and provides an opportunity to interact with world space community.[9] Furthermore, Pakistan has acquired new Digital Portable Sounder model-4 from University of Lowell (United States) and it is operational since 2008 at Multan. Previously, Pakistan received three Digisondes model-256 at Sonmiani and Islamabad during 1980s. Further, it is also seeking expertise on ionospheric study since 1987 from the U.S.[10] In addition, two operational geomagnetic observatories at Islamabad and Sonmiani have been operationalized with the cooperation of Royal Meteorological Institute, Belgium. Pakistan has further received assistance from British Geological Survey for upgrading Karachi geomagnetic observatory with the regular exchange of information. With regards to environmental impact and related assessments, SUPARCO is associated with the European Commission's project on assessing energy observation for monitoring the related environmental impact of energy usage. Pakistan also desires to develop joint R&Ds in areas of glaciers study and its monitoring in different climate changes. In doing so, Pakistan is currently collaborating with Chinese Institute of Tibetan Plateau Research (ITP).[11]

Furthermore, Food and Agriculture Organization (FAO) is working closely with SUPARCO in order to provide necessary assistance for capacity enhancement to Pakistan's fisheries research and management institutions, such as Pakistan Marine Fisheries Department (MFD). It is important to note here that; MED is also a member of the UN Economic and Social Commission for Asia and the Pacific (ESCAP) — Inter-Governmental Consultative Committee (ICC) — that advances the successful implementation of the regional space programs.[12] Various scientists representing SUPARCO frequently participate in international platforms concerning regional space science and research activities (including: Regional Working Groups (RWGs) on Space Science Technology and Applications (SSTA), Satellite Communications (ComSats), Remote Sensing and GIS (RS/GIS) and Meteorological Satellite (MetSat) Applications of UN ESCAP).[13] Similarly, Pakistan has utilized the Committee on Space Research (COSPAR) as an international platform that offers an opportunity to the experts towards a cross-fertilization of new ideas for research in space domain.[14] SUPARCO is also dealing with the International Society for Photogrammetry and Remote Sensing (ISPRS) for developing avenues for the application of the Photogrammetry and remote sensing technologies in Pakistan.[15]

Pakistan's National Coordination Committee is established for the implementation of the Satellite-aided Search and Rescue COSPAS-SARSAT Program within the country. The Committee drafts the legislative concerns related to emergency distress services and provides monitoring aspects in accordance with the needs of the International Maritime Organization (IMO), International Civil Aviation Organization

[9] For details on Inter-Programme Coordination Team on Space Weather, please visit: http://www.suparco.gov.pk/pages/ictsw.asp
[10] Ibid.
[11] Ibid.
[12] For details on Food and Agriculture Organizations, please visit: http://www.suparco.gov.pk/pages/fao.asp
[13] For more details on United Nations Economic and Social Commission for Asia and the Pacific, please visit: http://www.suparco.gov.pk/pages/un-escap.asp
[14] For details on Committee on Space Research, please visit: http://www.suparco.gov.pk/pages/cospar.asp
[15] Ibid.

(ICAO), and International Telecommunication Union (ITU).[16] SUPARCO is also a member of American Institute of Aeronautics and Astronautics (AIAA) and International Astronomical Federation (IAF). These memberships help the countries to study and assess the recent developments in space science and advancements.[17]In particular, IAF explores the peaceful usage of technical information and simulate the public interests in space issues through mass communication. SUPARCO Chairman has also been elected as a member of IAF for Liaison between International Organizations and Developing Nations.[18]

Pakistan is also associated with the Asian Association for Remote Sensing (AARS) that promotes the sharing of the information and goodwill on Remote Sensing among Asia-Pacific states. Participation in AARS programs relates with the scope of SUPARCO and provides an opportunity to deliberate on cross-cultural issues related with emerging technological developments in space.[19]

Pakistan, China and Thailand are considered as one of the founding members of the Asia Pacific Space Cooperation Organization (APSCO). APSCO aims to enhance cooperation in peaceful use of space. The APSCO Convention, according to Article-9, "shall enter into force when at least five (05) States have signed it and deposited with the host Government (China) their instruments of ratification or acceptance".[20]

Lastly, the Inter-Islamic Network on Space Science and Technology (ISNET) is working closely with the Organization of Islamic Countries (OIC) Standing Committee on Scientific and Technological Cooperation (COMSTECH). ISNET is functioning within SUPARCO's head office (situated in Karachi). The network is intensely involved in outreach activities for gathering policy experts, scientists and engineers from the OIC member states on exploring peaceful application of space.[21]

Pakistan's National Mission towards Remote Sensing Satellite

SUPARCO is now on its mission to develop Pakistan Remote Sensing Satellite to meet national and worldwide requirements in satellite imagery. The country was the first country to launch its space programs in South Asia with a policy focused on peaceful application of outer-space to ensure the socio-economic development of the country. In this vein, the Pakistan's space policy states: "space as a strategic sector, exploit all aspects of space science, technology, and its applications for national well-being".[22]

In July, 2018 two satellites of Pakistan were launched from China. At an altitude 640 kilometres, Pakistan Remote Sensing Satellite-1 (PRSS-1) is currently operating in sun-synchronous orbit. This satellite is helping Pakistan in meeting its imagery requirements in different domains such as land mapping, agriculture, town

[16] For details on National Coordination Committee for COSPAS-SARSAT, please visit http://www.suparco.gov.pk/pages/cospar-sarsat.asp

[17] For details on American Institute of Aeronautics and Astronautics, please visit: http://www.suparco.gov.pk/pages/aiaa.asp

[18] For details on Asian Association for Remote Sensing, please visit: http://www.suparco.gov.pk/pages/aars.asp

[19] Ibid.

[20] For details on Asia Pacific Space Cooperation Organization, please visit: http://www.suparco.gov.pk/pages/apsco.asp

[21] For details on Asia Pacific Space Cooperation Organization, please visit: http://www.suparco.gov.pk/pages/isnet.asp

[22] For details on National Space Programme, please visit: http://suparco.gov.pk/downloadables/nsc1.pdf

planning, and environmental monitoring, disaster and resource management for the welfare of state.[23] The second satellite, Pakistan Technology Evaluation Satellite-1A (PakTES-1A), is entirely an indigenous technological space-venture. It is 285-kilogram Remote Sensing Satellite (RSS), launched at 610 kilometre sun-synchronous orbit. This venture has undoubtedly enabled the scientists and engineers of Pakistan to explore new avenues for developing Pakistan's space program.[24] On the basis of propagated signal, the RSS technologies are being widely used to identify and categorize objects on Earth, including on the surface, atmosphere and oceans. PRSS-I is serving Pakistan in better and efficient assessment of changing weather patterns and hence its better management and mitigation (related measures) at different levels.

After air, water is another important element of eco-system, however (unfortunately), it is becoming a depleting resource primarily because of over-consumption and other environmental related issues. The issue of water scarcity and security is of great concern for Pakistan for obvious reasons, such as: its agro-based economy, increasing population, urbanization, climate change and decreasing level of precipitation, and the accelerated retreat of Himalayan glaciers. Moreover, the Indus River System has been severely affected due to decrease in average rainfall universally. According to the World Resource Institute, by 2020 Pakistan will face a major challenge with regards to supply and demand of water (Luo, Young & Reig, 2015). Moving further, by 2030, it will become more challenging, thus adding Pakistan among those countries who will be facing immense water stress (see Figure1).

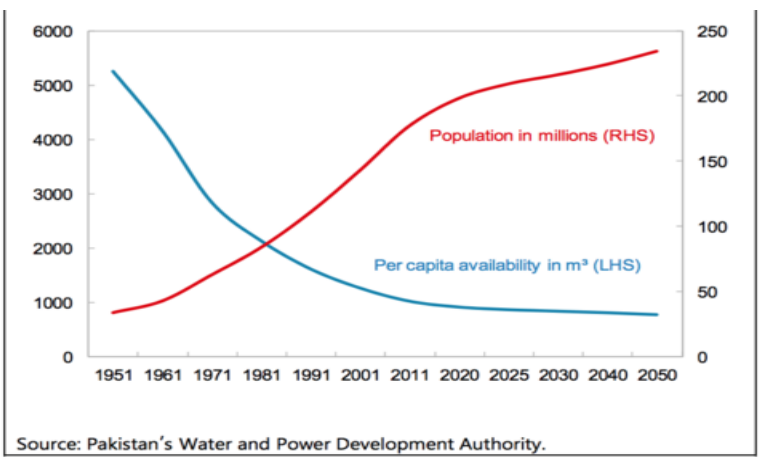

Figure 1: Pakistan: Water Availability (m3/person)

One of the major reason for inadequate water management in Pakistan is the lack of consensus at national level with regards to mega projects, such as the construction of dams. Water is a central element when it comes to power generation, agriculture, domestic and industrial use. India's aggressive policy against Pakistan and

[23] Ibid.
[24] Ibid.

its adverse impacts on the issue of trans-boundary water resources has well been acknowledged by the scholarly community. The contentions involved with regards to the trans-boundary water sharing (through IWT) between India and Pakistan have also became responsible for intensifying the issue of (disputed) Indian occupied Kashmir (Pappas, 2011; Wirsing, 2008).

It is estimated that by 2025 the population of Pakistan is expected to be around 250 million (Worldometer n.d.). This population 'explosion' will further intensify the challenges faced by Pakistan. In particular, it will reduce per-capita water availability. Considering Pakistan as agriculture-based country/economy, the scarcity of water will have serious implications on socio-economic domains. In order to deal with these threats, SUPARCO has been making efforts such as development of geospatial systems for better irrigation regulations, glaciers mapping and monitoring, river and flood vulnerability assessment, crop damage assessment, sea water intrusion mapping, and ground water prospection. The efforts have been solidified in shape of United Nations/Pakistan International Workshop on Integrated Use of Space Technologies for Food and Water Security (a collaboration between the United Nations Office for Outer Space Affairs (UNOOSA) and SUPARCO (UNSPIDER, 2013). The Workshop aimed at analyzing how space could become a valuable domain for socio-economic development while focusing on food security and water management.

In 2018, fourth international conference on the Use of Space Technology for Water Management was organized in Pakistan in collaboration with UNOOSA, SUPARCO, and the Prince Sultan Bin Abdul Aziz International Prize for Water (PSIPW), and Inter-Islamic Network on Space Science and Technology (ISNET) (UN Office for Outer Space, 2018).[25] The main objective of the conference was to engage and exchange technical insights regarding various technological trends and emerging challenges in terms of peaceful utilization of outer space (UN Office for Outer Space, 2018).

As Pakistan is facing immense challenges to deal with non-traditional threats, PRSS-I is being utilized for remote sensing to asses and monitor increasing water temperature and related variations. In addition, RSS can help in better assessment of quality and quantity of water demand in various areas of Pakistan which are different to locate physically. It provides information about the surface area of water bodies in different seasons. To this end, PRSS-I could be effectively utilized for a better crisis management plan and weather forecasting to predict the natural disasters such as floods, rains, storms, etc. In addition, Pakistan is an energy deficit country, it needs effective mechanism to deal with it. Electricity demand, supply and generation can also be met by timely weather forecasts. Once the electricity problem is resolved, it would help to

[25] The earlier versions of the international conference were in Riyadh (Saudi Arabia) in April 2008, Buenos Aires (Argentina) in March 2011, and in Rabat (Morocco) in April 2014.

reduce the economic and social costs not only with regards to managing disasters but also electricity demands of the country Pakistan significantly. Data related to past and current weather conditions can assist in future forecasts and decision making as well (Grind GIS, 2018). The spread of several chronic diseases can also be analyzed based on collected data through satellites. Remote Sensing also greatly assists the agriculture sector; it provides data concerning crops classification and provide better opportunities for the production (Vinciková, Hais, Brom, Procházka, & Pecharova, 2010). As Pakistan's economy is largely based on agricultural products hence, remote sensing assists in overcoming major impediments. Accurate agriculture reporting system is of great significance when it comes to production. Remote sensing technology is being used to forecast the production of crops and yield over a specific areas, which determines the quantity of crop harvested under different circumstances. It assists researchers to make a fair forecast about the quantity (in terms of production) of a particular crop. This technology can also be used to assess crops progress, caused damages, and subsequent required responses/precautions. It further helps in estimating physical acreage of farmland and overall crop containing capacity.

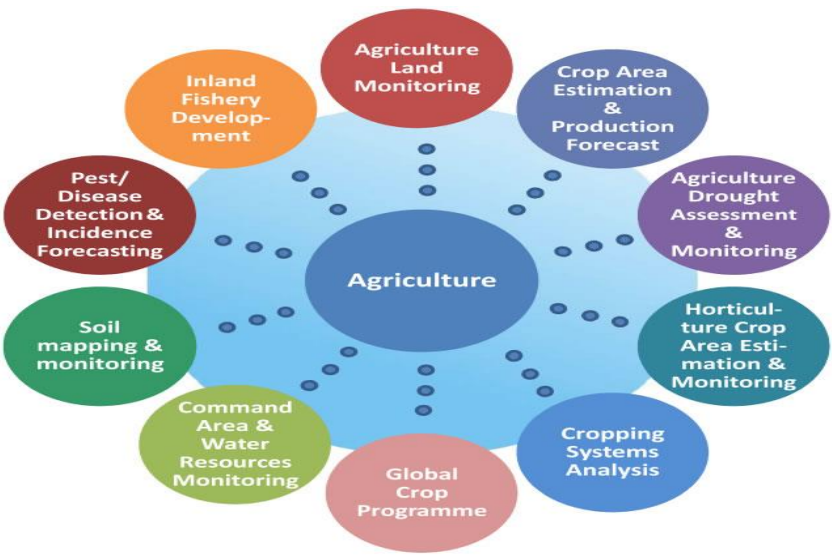

Figure 2: Remote Sensing Technology and Agriculture

Remote sensing technology also helps in identifying pests in farmland and plays a significant role in getting rid of the pests and diseases on the farm. Another important feature of this technology is that it provides data about the soil moisture. This information is then used to determine whether a particular soil is moisture deficient or not, and helps in planning the irrigation needs of the soil. Moreover, soil mapping is one the most common yet most important uses of remote sensing technology. Remote sensing helps in the identification of soils which are not suitable for crops.

Conclusion: Preventing Outer Space towards Military Confrontation

Pakistan is against the weaponization or militarization of 'space'. To this end, at the UN level, Pakistan has called for peaceful use of outer space and expressed that Pakistan is strictly against the weaponization of outer space. Pakistan recognizes the consequences of space militarization for the global peace and stability, thus has strictly advocated the peaceful application of space for socio-economic and overall sustainable development (e.g., Amil, 2018).

Pakistan is also a strong advocator of Prevention of Arms Race in Outer Space (PAROS) and on declarations on "no-first-placement of arms in outer space." Likewise, Pakistan also supports non-legally binding International Code of Conduct for Outer Space. Keeping in view all these initiatives, Pakistan has timely called for Confidence Building Measures in space at various forums to deal with any contentious situation(s) (Janjua, 2017). Hence, efforts should be made universally to keep space out of possible military confrontation.

Pakistan has been collaborating with many states on peaceful use of space technology. The significance of nontraditional security is another important area that needs an attention. As mentioned above, the use of space technology for mapping weather changes and assessing environmental hazards is under observation by many international institutions. Pakistan should also continue its commitments towards necessary initiatives at regional and international levels (collaborations) on spiral effects of nontraditional security. At international level, many organizations are working to improve the interstate coordination for overcoming the nontraditional security challenges in future. In particular, the UN Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) coordinates in the form of different regional workshops for facilitating technical help to various concerned states (Lewis, 2011). Pakistan can become a part of this organization for further improving its expertise related to catastrophe controlling.

At national level, Pakistan's Space program highlights use of space technology in different domains including agriculture, health, education, disaster management, environment and climate change, land planning, coastal and marine resources, geology and mineral prospection. With the application of peaceful use of space technology, Pakistan is determined to enhance its national infrastructure and ready to meet and curb the emerging non-traditional threats to its national sovereignty. Pakistan understands the dynamics of the non-traditional security that can also be improved through interstate collaborations. Pakistan offers avenue to many states to share their technical expertise aiming to advance its indigenous infrastructure and to achieve common goals for excelling in innovation and state of the art application of peaceful uses of space technology.

Keeping in view the prevailing strategic environment, Pakistan should work towards indigenization of its national space program. It will help in future to deal with an increasing demand from civil sector with respective to their advance communication means linked with GPS, mobile telephony and the internet. SUPARCO should be given desired attention by the policy makers. It will lessen Pakistan's reliance on foreign satellites, particularly in civilian domain. Pakistan should also aim for indigenization of space science technology and gradually incentivize its human resource towards meetings its missioned goals. Through enhancing international collaborations, Pakistan should continue to provide an exposure to its human resource through sharing of space based knowledge. A robust and sustainable space program is significant for country's

economic gains as well. Furthermore, Pakistan must work towards investing more in its space diplomacy internationally. Such an approach can improve its foreign policy and will develop more areas of cooperation by projecting its enhanced means of soft power in space (Arif, 2018).

Pakistan is fully determined to fight the non-traditional security threats by using space technology. With regards, Pakistan's Remote sensing technology is aimed to play significant role in disaster management, especially during the awareness and reaction phases. Space technology could provide not only cost efficient and effective methods of water management but also accurately monitors and predicts long term trends of resource depletions. Pakistan is also willing to purse such cost effective ways through peaceful application of space technology. Pakistan's active participation is appreciative at various international institutions but its decade's old dedication and determination needs to be highlighted nationally and internationally. Pakistan's space program expresses its interests in advancing innovative technical means in space technology. It also incentivizes its efforts towards advanced states for endorsing the international collaborations on understanding the peaceful application of space.

References

Amil, F. (2018). Statement to Assembly's Disarmament and International Committee. Permanent Mission of Pakistan to the United Nations and Other International Organizations.

Arif, M. (2018). Let's take to the skies and beyond. *Daily Times*. Retrieved from https://dailytimes.com.pk/268167/lets-take-to-the-skies-and-beyond/.

Bailey, J. (2005). Nontraditional Security Threats in the U.S.-Mexico Bilateral Relationship: Overview and Recommendations. *Georgetown University*, 2-3. Retrieved from https://www.wilsoncenter.org/sites/default/files/Nontraditional%20Threats.Bailey1.doc.

Bello, O. Mumin & Aina, Y. Adedoyin (2013). Satellite Remote Sensing as a tool in disaster management and sustainable development: Towards a synergistic approach presented at third international *Geography Symposium- GEOMED*. Retrieved from https://ac.els-cdn.com/S1877042814016449/1-s2.0-S1877042814016449-main.pdf?_tid=8aad69a4-e581-4ff3-ad42-645007335fef&acdnat=1530596803_f9d87a35866720046ba99b616672d7ad content/uploads/2016/10/19-Oct-Pakistan-OuterSpace.pdf.

Buttenheim, A. (2010). Impact evaluation in the post-disaster setting: A case study of the 2005 Pakistan earthquake. *Journal of Development Effectiveness, 2*(2), 197-227.

Elbe, S. (2006). Should HIV/AIDS be securitized? The ethical dilemmas of linking HIV/AIDS and security. *International Studies Quarterly, 50*(1), 119-144.

Feldbaum, H., Lee, K., & Patel, P. (2006). The national security implications of HIV/AIDS. *PLoS Medicine, 3*(6), e171.

Grind GIS (2018). Remote Sensing Applications in Agriculture. Retrieved from http://grindgis.com/remote-sensing/remote-sensing-applications-in-agriculture.

Hamilton, J. P., & Halvorson, S. J. (2007). The 2005 Kashmir earthquake. *Mountain Research and Development, 27*(4), 296-302.

Hill, D. P. (2013). Trans-boundary water resources and uneven development: Crisis within and beyond contemporary India. *South Asia: Journal of South Asian Studies*, *36*(2), 243-257.

Institute of Tibetan Plateau Research. *Pakistan Space & Upper Atmosphere Research Commission (SUPARCO).* Retrieved from http://www.suparco.gov.pk/pages/itp.asp.

Jain, S. K., & Singh, V. P. (2003). Water resources systems planning and management (Vol. 51). Elsevier.

Janjua, T. (2017). Permanent Representative of Pakistan to the United Nations, Geneva and Conference on Disarmament during the Thematic Debate of the *First Committee on Outer Space* (Disarmament Aspects). Retrieved from https://s3.amazonaws.com/unoda-web/wp-

Khalid, I. (2010). Trans-boundary water sharing issues: A case of South Asia. *Journal of Political studies*, *17*(2), 79.

Kicinger, A. (2004, February). International migration as a non-traditional security threat and the EU responses to this phenomenon. Warsaw: *Central European Forum for Migration Research*.

Miner, M., Patankar, G., Gamkhar, S., & Eaton, D. J. (2009). Water sharing between India and Pakistan: A critical evaluation of the Indus Water Treaty. *Water International*, *34*(2), 204-216.

Revolvy (n.d.). Copenhagen School (international relations). *Revolvy*. Retrieved from https://www.revolvy.com/page/Copenhagen-School-(international-relations).

Lewis, S. (2011). Remote sensing for natural disasters: Facts and figures. *SCIDEVNET*. Retrieved from https://www.scidev.net/global/earth-science/feature/remote-sensing-for-natural-disasters-facts-and-figures.html

Luo, T., Young, R., & Reig, P. (2015). Aqueduct Projected Water Stress Country Rankings. *World Resources Institute*. Retrieved from http://www.wri.org/publication/aqueduct-projected-water-stress-country-rankings

NASA (n.d.). JPL History: First Satellite. *Jet Propulsion Laboratory, California Institute of Space.* Retrieved from https://www.jpl.nasa.gov/jplhistory/early/firstsatellites.php.

NASA Earth Data (n.d.). Remote Sensors. Retrieved from https://earthdata.nasa.gov/user-resources/remote-sensors

National Ocean Service (n.d.). What is Remote Sensing? National Oceanic and Atmospheric Administration, *U.S. Department of Commerce*. Retrieved from https://oceanservice.noaa.gov/facts/remotesensing.html.

Pappas, G. (2011). Pakistan and water: new pressures on global security and human health. *American Journal of Public Health*, *101*(5), 786-788.

Pavlović, S. (2017). The (un) justification of environmental securitization. *Bezbednost, Beograd*, *59*(1), 137-149.

Peter, N. (2006). The changing geopolitics of space activities. *Space Policy*, *22*(2), 100-109.

Rucktäschel, K., & Schuck, C. (2018). Non-Traditional Security Issues and the Danger Not to See the Forest for the Trees: A Critical Analysis of the Concept of Environmental Security. *European Journal for Security Research*, *3*(1), 71-90.

Smith, R. (2017). The water scarcity-conflict Nexus: The case of Darfur (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Trombetta, M. J. (2006). The securitization of the environment and the transformation of security. In Standing Group on International Relations Conference, *Turin* (pp. 1-22).

UN Office for Outer Space (2018). 4th International Conference on the Use of Space Technology for Water Management. Retrieved from http://www.unoosa.org/oosa/events/data/2018/psa_pakistan_water.html

UNAIDS (n.d.). India. Retrieved from http://www.unaids.org/en/regionscountries/countries/india.

UNSPIDER (2013). UNOOSA/Pakistan Workshop on Space Technologies for Food and Water Security. Retrieved from http://www.un-spider.org/news-and-events/news/unoosapakistan-workshop-space-technologies-food-and-water-security.

Vinciková, H., Hais, M., Brom, J., Procházka, J., & Pecharová, E. (2010). Use of remote sensing methods in studying agricultural landscapes. *Journal of Landscape Studies, 3*, 53-63.

Vorovenchii, I. (2011). Satellite Remote Sensing in Environmental Impact Assessment. *Bulletin of the Transilvania University of Brasov, 4*(53): 73. Retrieved from http://webbut.unitbv.ro/bu2011/Series%20II/BULETIN%20II%20PDF/Vorovencii%20I.pdf

Wirsing, R. G. (2008). The Kashmir territorial dispute: the Indus runs through it. *The Brown Journal of World Affairs*, *15*(1), 225-240.

Worldometer (n.d.), Pakistan's Population. Retrieved from http://www.worldometers.info/world-population/pakistan-population/

Civil Military Coordination and Stabilization in Federally Administered Tribal Areas (FATA),

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Tughral Yamin[1]

Abstract

The importance of civil military coordination assumes seminal importance in ensuring the success of all phases of a counter insurgency campaign. In the true tradition of the Clausewitzian dictum that war is the continuation of policy and vice versa; Pakistan Army has been employed as a matter of policy in counter insurgency operations in the erstwhile tribal areas. They have also been used in the stabilization operations to bring about normality in the insurgency ridden areas. In fact the employment of Pakistan Army in the stabilization process defies any previous example in any other country. In all phases of the conflict cycle, the military has worked hand in glove with its civilian counterparts. The civil-military coordination (CIMIC) in the insurgency ridden areas has taken place within the framework of the established ground rules of an organized counter insurgency campaign. It would not be unfair to say that the return to normality in the erstwhile FATA has only been possible because of a well-knit CIMIC architecture. This paper briefly explicates the salient points of the CIMIC aspect of the counter and post-insurgency part of the operations in the conflict zones and highlights the importance of this aspect of dealing with insurgencies.

Keywords

Civil Military Coordination (CIMIC), Counter Insurgency Operations (COIN), Internally Displaced People (IDP), Temporarily Displaced People (TDP), FATA, stabilization operations

Introduction

Conflicts take place because of a variety of reasons. Usually it is a direct result of poor governance and misrule by those at the helm of affairs. The situation is aggravated, when external elements find the situation ripe and add to the factors which destabilize the state of peace. In case of Pakistan, the conflict that has raged in its tribal areas can be traced to the Afghan Jihad in the last century against the Soviet forces. The US found it an ideal opportunity to defeat its Cold War rival by sponsoring guerrilla war that pitched Afghan Mujahidin grounded in Islamic ideals against the 'godless' Soviet empire. The Afghan guerrillas were equipped with weapons purchased by the US Central Intelligence Agency (CIA) with Saudi money to fight a long drawn war to weaken the overstretched Soviet 'Red' Army in the rugged and inhospitable land

[1] *Professor Tughral Yamin* is the Associate Dean at the Centre for International Peace and Stability (CIPS), National University of Sciences and Technology (NUST), Islamabad.
E-mail: adeancips@nipcons.nust.edu.pk

famously dubbed as the graveyard of empires (e.g. Bearden, 2001). After ten years of extremely expensive and futile campaigning, the Soviet Motor Rifle Divisions withdrew across the Amu River in 1989. The Soviet Union collapsed soon after. Today the Americans are confronted with almost a similar situation in Afghanistan, as they seek a 'face saving' exit out of the country. A clearly ascendant Taliban sniff victory after nearly eighteen years of a war that also engulfed the bordering tribal areas of Pakistan.

After the Soviets withdrew from Afghanistan and left the warring Afghan warlords to their own devices in 1989, a new force in the shape of Taliban moved in to occupy the space created by the prevailing anarchy. The Taliban imposed a primitive roughshod order to establish order out of chaos. At first they took hold of the countryside and finally were able to capture Kabul in 1996. The Taliban, out of tribal traditions of hospitality, hosted the Al Qaeda (AQ)- an organization led by Arab ideologues like the Saudi Osama bin Laden (OBL) and the Egyptian Dr. Ayman Al Zawahiri- to fight American imperialism. The world history took a turn for the worse, when AQ cohorts were blamed for 9/11 attacks on the symbols of American power and prestige i.e., the Twin Towers (Manhattan, New York) and the military headquarter – the Pentagon in Washington DC (The 9/11 Commission Report, 2004). These attacks and what happened in their aftermath is now history but suffice is to say that it triggered a chain of events that brought about more death and destruction to this area than the 3000 that perished in the Twin Towers. Facts and figures also prove that the damage done in Afghanistan and Pakistan as a result of the American retaliation has been greater than that caused by the Soviet invasion and the civil war that followed it. In Pakistan alone, the death toll has been more than 70,000.

For Pakistan, there was no escaping the war in Afghanistan. Under intense pressure from Bush administration, Government of Pakistan under General Musharraf gave up on the Taliban and sided with the US government (Yamin, 2015). The price that it paid for this divergence was enormous, in terms of lives and revenues lost. The multinational 'holy' warriors, who were once lionized as heroes for fighting against the Soviets and were willingly allowed the use of Pakistani tribal areas as launch pads, were now sworn enemies. The snapping of this relationship was brutal and abrupt. As the conflict spread into settled areas like Swat, the government was forced to adopt a kinetic approach. For the first time in country's history, army was sent into the tribal areas to launch a series of military operations. Prior to army's intervention, law and order had been the preserve of the civil armed forces in the tribal areas. A series of military operations were launched to flush out and eliminate the militants. Since, these manoeuvres were conducted on the country's own territory, both civilian and military agencies joined hands to first evacuate and subsequently rehabilitate those living in the tribal areas. This was no mean feat and is far from over.

Military as the First Responder

The military in Pakistan is constitutionally duty bound to come to the aid of civil power, when asked to do so.[2] The employment of military in civilian affairs is always a political decision. Therefore, the time and duration of employment and its return to the barracks is the prerogative of the political leadership. Since army is configured to respond to

[2] For details, visit www.pakistani.org/pakistan/constitution

emergencies, its services are requisitioned in all cases of natural and manmade disasters. The army is also called in for nation building tasks such as constructing strategic highways such as the construction of the 1300 km long Karakoram Highway (KKH), over one of the most mountainous regions of the world.[3] In short, it is not unusual in Pakistan for soldiers to operate alongside civilian agencies over extended period of times. Therefore, they understand of the necessary nature of coordination with the civil government. As part of their annual training they learn such law enforcement duties as crowd control. Each field formation has standard contingencies for managing flood and earthquake relief. Regular liaison with civil agencies such as National Disaster Management Authority (NDMA) is carried out in peacetime for possible deployment on flood or other emergency duties.

Pakistan army was first employed in handling refugees at the time of the partition of India, which saw the largest exodus of mankind in contemporary history. However, the military operations in Swat and the erstwhile tribal areas have proved it to be a different kind of experience because it involved Internally Displaced People (IDPs). The Government of Pakistan refers to the people displaced due to internal conflict as Temporarily Displace People (TDPs). This is to show the state's resolve to resettle these uprooted people in their own homes as soon as possible.

The evacuation and subsequent rehabilitation of the IDPs/TDPs from the troubled areas of Swat district in Khyber Pukhtunkhwa (KPK) province and the former tribal areas of North Waziristan Agency and South Waziristan Agencies (NWA and SWA) was done in close collaboration with the civil administration. The relief and rehabilitation work also involved close cooperation with Non-Governmental Organizations (NGOs). A number of national and international civil society organizations (CSOs) and almost 42 NGOs have been involved in the rehabilitation work in the tribal areas (e.g. Bajauri, 2016).

As a safety precaution, the areas, where the military operations were launched were first cleared of non-combatants before the army moved in. In case of Swat, which is a settled district of KPK a massive evacuation of civilian population was conducted and nearly 3 million people were moved from their towns and villages to camps located in the KPK. After Operation Rah-i-Rast had been successfully concluded, the IDPs were quickly moved back, so they could resume their daily lives (Torwali, 2012). The main reason for its success because all elements of CIMIC meshed well and operated like well-oiled machinery.

Civilian / Foreign Disaster Management Agencies

A number of civilian agencies have the mandate to respond to disasters. In this regard the first and foremost agency in Pakistan is the NDMA and its provincial affiliates – the Provincial Disaster Management Agencies (PDMAs). The office of the Director General of the NDMA is located in the prime minister's secretariat to provide him easy access to the chief executive of the country. The warehouses of the NDMA are located all over the country with immediate disaster relief goods.[4]

Similarly, issues related to refugees and displaced people are handled by the Ministry of States and Frontier Regions or SAFRON.[5] The office of the Commissionerate for Afghan Refugees (CAR) was created under the auspices of this

[3] For details, visit www.beltroadinitiativecom/karakoram-highway/
[4] Details about the mandate of the NDMA are available on their website http://www.ndma.gov.pk/
[5] For details, visit http://www.safron.gov.pk/

Ministry. This was done to streamline the handling of Afghan refugees, who had started pouring across the international border in 1979 after the Soviet invasion of Afghanistan. A second and third wave of refugees came into Pakistan after the American invasion of Afghanistan. Although a number of Afghan refugee camps have been disbanded. However 43 of these still exist. It is also important to note that a very large Afghan refugee population lives outside these camps.[6] The Ministry of Interior (MoI) monitors refugees and migrants that come into the country. The task of registering them is the responsibility of the National Database Registration Authority (NADRA).[7] This agency registers refugees and IDPs and issue them relevant identity documents. In addition, ATM cards are also issued to the IDPs to draw the compensation that the government offers to them to resume their livelihood. The MoI cedes control of the civil armed forces (CAF) and the police to the Army in times of an emergency. This is only a temporary measure and the paramilitaries and police revert to the control of the civilian provincial and federal authorities once the operational requirement is no longer there.

A number of foreign agencies are also involved in disaster relief management, which includes the UN High Commission for Refugees (UNHCR).[8] The UNHCR not only provides relief and rehabilitation to the refugees but also helps in their repatriation to their home country, once the situation normalizes in the conflict zone. To begin with, the UNHCR identifies genuine refugees and provides them with identity documents. Government agencies then assign them to various refugee camps. Sometimes the stay of the refugees in host countries is prolonged. To make the best use of their time, the UNHCR opens schools and vocational training centers for the affected, as has been the case of the Afghan refugees. The International Committee of the Red Cross and the Red Crescent (ICRC) has among other things opened hospitals to provide services to the sick and the wounded.[9] The World Food Program (WFP) ferries in food items, when the world considers it necessary to send in food aid.[10] With regards, other UN agencies also chip in where necessary. Some international non-governmental organizations (INGOs) with credible credentials are also allowed to join in the relief effort. In case of the earthquake that took place in 2005, NATO forces along with men, materiel and helicopters also lent a hand in the relief operations. These forces became part of Operation Lifeline that was managed by the Pakistan Army (Pakistan: The complexities of delivering aid, 2006). All these operations become part of the overall CIMIC effort to alleviate misery and help those in need of dire help.

Civil Military Cooperation (CIMIC)

CIMIC procedures and architecture is flexible as it takes shape as per the developing situation. Usually, once the government calls in the army, it informs the civil agencies the number of soldiers that have been placed at their disposal. It can be anywhere from a platoon size force to a full-fledged brigade or even a division or more. One of the largest operation involving multinational and local agencies in relief and rehabilitation operations was in Pakistan's earthquake relief operations of October 2005. This also involved for the first time NATO aircraft, resources and troops (Khattak, personal interview, May 25, 2019). Traditionally, the military commander is supposed to link up

[6] For details, visit http://kpkcar.org
[7] For details, visit https://www.nadra.gov.pk/
[8] For details, visit https://www.unhcr.org/
[9] For details, visit www.icrc.org
[10] For details, visit www.wfp.org

with the civilian agencies in the theatre of operation. The military force is equipped with fast means of transportation such as light aircraft and helicopters and all-purpose four wheels drive vehicles and the necessary communication equipment (long range wireless equipment) that communicate with their own elements already deployed in the area. Irrespective of who contacts whom, a CIMIC HQ quickly takes shape. It is the government's decision to establish a chain of command. In case the military commander has the necessary means and authority, which is invariably the case, he is placed in command. But this is not the rule; a civilian with sufficient authority can be placed on top of the relief and rehabilitation effort. In any case the command shifts from the military to the civilian authorities when the situation is considered safe. NATO has a joint publication that lays out the rules for CIMIC titled 'AJP 9- NATO CIMIC Doctrine' (NATO, 2003).[11] The document clearly lays down the principles of CIMIC and provides an unambiguous framework for civilian and military forces working together in the affected area. The UN Department of Peacekeeping Operations (UNDPKO) has also produced a document giving the policy guidelines for CIMIC in a conflict zone.[12]

In Pakistan enough institutional experience exists to provide the army and the civil authorities, the plans and procedures of collaborating together in the best possible manner. The army in particular has contingency schemes down to the unit level to provide the basic information and guidelines of the likely situations to accept in the units/formation's Area of Responsibility (AOR) and how best to react to these. The experiences in Swat and the erstwhile tribal areas have further burnished the credentials of the military to work in tandem with civilian agencies in the conflict and post-conflict zones.

The recent events have shown that the army together with the civilians not only planned the evacuation of local populations to safe areas but also organized and managed camps for what are now referred to as Temporarily Displaced People (TDPs). These displaced people were also successfully relocated to their homes and hearths once the danger was over. In the post-conflict phase, the transition from military to civil administration has always been difficult because the putative civilian structures had broken down and in certain cases are still convalescing from the setbacks of a violent breakdown. In most cases the civilian administrators are not confident to take over, once the situation has returned to normal. This, nonetheless, has to be done. Police, prison and judicial system have to be revived. New human resources have to be engaged to take-over during the transitioning phase. Once the army leaves the police and other law enforcement agencies have to occupy the void quickly and efficiently so that there is not relapse to violence. The return to civilian control is important for the local masses to return the areas that they had left with confidence. For instance, in Swat, the Army handed over the control to the civilian authorities in a ceremony held in Mingora on October 22, 2018 (Yusofzai, 2018). As per reports, the civilian authorities have so far been successful in reasserting control, though a large army presence still remains in the valley.

[11] Document is available at: https://www.nato.int/ims/docu/ajp-9.pdf.
[12] The document is available at: https://www.unocha.org/sites/dms/Documents/DPKO%20UN-CIMIC%20(2010).pdf)

Rules of CIMIC

Good inter-agency liaison can be the single most important feature in ensuring the success of an operation which involves civilian and military organizations. Based on common experiences, some cardinal rules need to be observed under all circumstances. The first and the foremost rule of CIMIC is to identify one's adversary in quantitative terms. A successful CIMIC operation requires close cooperation and coordination among the military and civilian authorities at all levels. This begins at the top most bureaucratic level and goes down to that of the foot soldier. The civilian and military partners should not only register and understand the rank structure of their respective service but they should also know them by name. A telephone directory of concerned personnel should be exchanged at appropriate levels. Each side should be well aware of how the other is equipped, geared and mandated to handle a crisis. Standard Operating Procedures (SOP) must be known and understood in adequate detail.

Second rule of CIMIC is to identifying and knowing one's area. Military units and commanders are rotated very often for operational reasons. Many times they are not familiar with their new AOR. Sometimes, they may be required to operate outside the area where they are stationed. Therefore, it is necessary that they not only intimately know their operational area but also the one, where they may be employed jointly with civilian agencies to handle an internal security threat.

Third rule of CIMIC is to have complete realization of one's job. In case of a military action, the commander and staff may understand when and how to call for an airstrike but they may not exactly know how to call and collaborate with the police or the civil administration. The division of labor must be understood. The mandate of the other party should not be under or over estimated. The magnitude of an internal disaster can vary and would require proportionate response for each situation. The military personnel knows that it must have a superiority of three to one to succeed in an attack but these manpower ratios may not match for internal security operations. Threat assessment and manpower requirements need to be calculated to the n^{th} degree. Plans to raise additional forces in times of emergency must be catered for.

Fourth rule of CIMIC is regard for language. For the military and civilian agencies to be on one page, they must know that a fair understanding of each other's way of speaking and method of communication is integral when working together. Ideally, the Army, police, sundry law enforcement agencies and district administration should have a common language. This is not impossible but for the time being a common jargon can be developed, so as to enhance the understandability of the meaning and import of each word used during operations.

Fifth rule is to believe in each other. This is perhaps the most important rule. Sometimes due to mutual suspicions and crosscutting interests, civil and military agencies tend to operate on different wavelengths and frequencies. In an environment of suspicion and trust deficit, important operational intelligence may be withheld in the 'service interest'. An important piece of information left unshared at the correct point of time can jeopardize the success of the operation. Similarly, a suspect released without informing counterparts in other services may also result in unwanted consequences. Such behavior can only be prevented by creating an environment of trust. The top officials must inspire confidence in each other and also instruct their subordinates to believe in each other and not keep the information of operational importance from each other. Needless to say, all members of the team must understand that their interests are common and transcend petty service rivalries. Under all

circumstances, all information (important as well as trivial) must be shared in good faith.

A CIMIC Document

To institutionalize CIMIC processes, lessons learnt during the operations are properly recorded and preserved. Archiving can be a long and tedious task but once the records are finalized, the Ministry of Defense (MoD), Ministry of Interior (MoI), Ministry of SAFRON and the Planning Commission have joint ownership of this document. The findings can even be presented in the parliament and comments can be taken from the legislators to be included in the final paper. A doctrine on CIMIC can be developed as a part of the National Security Policy. The joint CIMIC document must be scrutinized and updated from time to time. For the time being, a CIMIC pamphlet should be released for future guidance. This should include the following points;

Planning & Preparation

Whereas, past meteorological records and future weather patterns can help predict natural disasters like floods and typhoons, it is very difficult to determine, where and how an insurgency is likely to break out. It is quite true many times the state of affairs are so obviously bad that a crisis is only begging to unfold. It is unfortunate, however, that the decision makers continue to ignore such a situation at their own and the nation's peril. Experiential evidence reveals us that when an undesirable situation is allowed to fester for long, it just explodes all of a sudden and by that time it is too late to control or contain it. It is time that dispassionate analysis is made of how and why things have gone wrong in the past and how this state of affairs can be avoided in future. Experts in the field of academia and from among the practitioners can be invited to formulate a policy on how to predict and prevent a manmade disaster. In this digital age, a software for predicting such events can be developed. Pentagon is known to use such a software (Shactman, 2011). The Group of Experts (GE) tasked with monitoring crises, should be provided support and inputs from relevant ministries and organizations. These experts should meet regularly to update their advice to the government regarding preparations for any unforeseen eventuality. This group should also identify critical infrastructure that must be protected at all costs to prevent a breakdown of essential command and control elements.

Rehearsals

Traditionally, the military rehearses all operational contingencies during peacetime. This practice must be expanded to include civilian agencies for better preparedness to handle manmade disasters which have the potential to cause dislocation of citizens. Presently, the only rehearsals that soldiers are made to undergo concern riot control procedures and how to take over the situation from the civil authorities such as the district magistrate and the police. After having experienced refugee inflows and rehabilitation of IDPs in the past three to four decades, it is time that relief and rehabilitation of uprooted people due to conflict should also be practiced as part of the broader CIMIC apparatus.

Reconnaissance

Joint reconnaissance of restive areas should be carried out on a regular basis. While the question of who decides which areas to designate as restive and which areas to

categorize as peaceful is debatable- It is only practical to suggest that the internal security matrix should be part of the National Internal Security Policy (NISP) which is prepared by the MoI (NACTA, 2018).[13] Additional briefings should be obtained from civil and military intelligence agencies before embarking on this venture. This exercise shall be undertaken with the view to obtain the latest information on how things appear on ground. This way, it shall help the first responders both civilian and military to prepare suitable contingencies.

Coordination

Peacetime coordination with civil agencies including the district administration, police, relevant ministries, NGOs and INGOs can save a lot of botheration and waste of time. It would prove to be a good idea to frequently exchange mobile phone numbers, email and postal addresses to save time. An up to date directory can be useful to all concerned officials. In addition, establishing direct hotlines among the concerned agencies may also facilitate improved coordination, eventually leading to a better state of planning and activity in times of crises.

Conclusion

CIMIC is an imperfect science. It can only be perfected through mutual interaction and practice. An internal security operation brings together different institutions of the state. Various agencies working together need to bond well. Their relationship should be free of fear and inhibition. Respecting each other's turf can increase respect. Sharing of experiences can be a good way of creating an association of trust. Holding on to precious information can have disastrous results. All those involved must understand that whatever, they are doing together is in the interest of the nation. All members of the CIMIC team must learn to operate together and their aim should be not personal glory or the aggrandizement of a particular service. It should be in the common interest of the nation and the state.

A good CIMIC model can be considered as a template to be taught in the military and civilian schools and staff colleges. The current counter insurgency and stabilization operations have thrown up a lot of examples that can be emulated. Important lessons learnt must become part of any and all future operations.

Similarly, it is important to teach Counter Insurgency Operations (COIN) and Winning the Hearts and Mind Strategy (WHAM) during active operations and stabilization phase from a common platform. Military, police and district management can develop a common pamphlet, where these operations can be conceptualized and practiced collectively.

An important phase of the stabilization operation is rehabilitation and mainstreaming of former militants. This has to be done through a formal process of Disarmament, Demobilization and Reintegration (DDR). The peacekeepers are familiar with this activity and understand the basics of it.[14]

Rehabilitating former combatants on one's own territory can be an emotional experience. These people have fought and killed a number of personnel belonging to the law enforcement agencies (Brigadier Commander Swat Operations, personal

[13] The NISP II (2018-2023) is available at http://moidemo.nadra.gov.pk/download/national-internal-security-policy-2018-2023/.

[14] Detailed instructions are available on the UN website http://www.unddr.org/what-is-ddr/introduction_1.aspx

interview, August 05, 2015). It is difficult to forgive them. CIMIC operators must prepare a uniform code of ethics for these informal soldiers (some of whom will come under the category of child soldiers). Many of them have been seduced by religious ideologues to follow virulent ideologies, without understanding the import of their actions. It is important to handle them sensitively. All agencies involved should carefully screen and monitor them, to minimize the chances of their relapse into their former ways. The real victory of a COIN operation is to actually accommodate the former combatants into the mainstream of the society. Considering the aforesaid as an ideal, all elements of the state must work towards similar end in order to ensure a lasting state of peace.

The title cover of Pakistan Army Green Book 2019 shows a Major General in combat fatigues handing over the 'command' of Swat to civilian administrators including a DIG of the police. This happy ending has only been possible because of a well-integrated CIMIC (Suddle, 2019). It can only be hoped that such meaningful investment in CIMIC can facilitate the process of peace restoration in the conflict-prone areas within the country.

References

Bajauri, IK. Riaz, S. & Bashir, S. (2016). Role of Civil Society Organizations in FATA Education. *Global Social Sciences Review (GSSR)*. 1*(1)*: 39-47.

Bearden, M. (2001). Afghanistan, Graveyard of Empires. *Foreign Affairs*. Retrieved fromhttps://www.researchgate.net/publication/271746514_Afghanistan_Graveyard_of_Empires

Commissionerate of Afghan Refugees. (n.d.). Retrieved from http://kpkcar.org

Constitution of Pakistan. (n.d.). Retrieved from www.pakistani.org/pakistan/constitution.

DDR. (n.d.). Retrieved from http://www.unddr.org/what-is-ddr/introduction_1.aspx

NACTA. (2018). NISP (2018-2024). *NACTA*. Retrieved from https://nacta.gov.pk/nisp-2018/

NADRA. (n.d.). Retrieved from https://www.nadra.gov.pk/

NATO. (2003). NATO Civil Military Cooperation (CIMIC) Doctrine. *NATO*. Retrieved from https://www.nato.int/ims/docu/ajp-9.pdf

NDMA. (n.d.). Retrieved from http://www.ndma.gov.pk/

National Internal Security Policy (2018-2023). Retrieved from http://moidemo.nadra.gov.pk/download/national-internal-security-policy-2018-2023/

Pakistan: The complexities of delivering aid. (n.d.). *Relief Web*. Retrieved from https://reliefweb.int/report/pakistan/pakistan-complexities-delivering-aid

Policy Guidelines on CIMIC. (2010). *United Nations Department of Peace Keeping Operations (UNDPKO)*. Retrieved from https://www.unocha.org/sites/dms/Documents/DPKO%20UN-CIMIC%20(2010).pdf

Ministry of SAFRON. (n.d.). Retrieved from http://www.safron.gov.pk/

Shachtman, N. (2011). Pentagon's Prediction Software Didn't spot Egypt's Unrest. Retrieved from https://www.wired.com/2011/02/pentagon-predict-egypt-unrest/

Suddle, Muhammad Shoaib. (2019). Tackling Terrorism: Pernicious Implications of Poor Policing. *Pak Army Green Book 2019*. 114-128.

The 9/11 Commission Report. (2004). National Commission on Terrorist Attacks upon the United States of America. Retrieved from http://govinfo.library.unt.edu/911/report/911Report.pdf

United Nations High Commission for Refugees (UNHCR). Retrieved from https://www.unhcr.org.

Yamin, T. (2015). Examining Pakistan's Strategic Decision to Support the US War on Terror. *Journal of Strategic Studies*. Retrieved from https://www.academia.edu/20427901/Examining_Pakistan_s_Strategic_Decision_to_Support_the_US_War_on_Terror

Yusofzai, S. (October 22, 2018). Army hands over administrative powers to civil authorities in Swat. *The Express Tribune*. Retrieved from https://tribune.com.pk/story/1831403/1-army-hands-administrative-power civil-authorities-swat/

Emerging Trends of Artificial Intelligence in South Asia and its Implications for Pakistan

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Shaza Arif[1]

Abstract
Artificial Intelligence (AI) has emerged as a breakthrough technology which is astonishingly impressive. Major world powers are rapidly integrating AI in their military doctrines. This trend of militarization of AI can be seen in the South Asian region as well. Following the theoretical approach of offensive realism, China and India are in full swing to revolutionize their militaries with this emerging trend in order to accumulate maximum power and to satisfy their various interests. Consequently, Indian military modernization has the potential to provoke Pakistan to take counter measures. Pakistan is already encountering a number of challenges in economic sector and will face the strenuous task of accommodating a handsome financial share for the development of its AI capabilities. South Asia is a very turbulent region characterized by arch rivals who are also nuclear powers and have repeatedly indulged in various crises over the years. Introduction of AI in South Asia will have significant repercussions as it will trigger an arms race and at the same time disturb the strategic balance in the region.

Keywords
Artificial Intelligence (AI), offensive realism, South Asia, Pakistan, India, Militarization of AI

Introduction
Artificial Intelligence (AI) is in its full swing to advance and influence different arenas of human life in present times. The twenty first century is marked with a profound and unprecedented elevation in this sphere. It is incredibly difficult to comprehensively define AI due to its broad structure. In its simplest sense AI can be defined as; the programming of machines in such a manner that their cognition and responsive capabilities match that of a human being while taking the aid of a tremendous amount of data.

The turning point in the field of AI was 2016 when Lee Seodal, a professional Go player of 9 Dan rank lost the game of Go from a computer program developed by Google i.e. 'Alpha Go'. Taking into account that Go is a very complicated and deceptive game and prodigious amount of intelligence is required to win it, this match was one of the major breakthroughs in the field of Artificial Intelligence. The potential of AI was unleashed as a result of this match and endeavors towards this emerging technology eventually picked up pace. AI is a dual use technology and the world has already witnessed the fruits of AI in the commercial sector. This technology is swiftly expanding into the military domain. This is driven by the enthralling efficiency of autonomous weapons encompassing immense accuracy and a very minute response

[1] *Shaza Arif* is a student of Defence and Diplomatic Studies at Fatima Jinnah Women University, Rawalpindi. E-mail: shazaarif14@gmail.com

time. Considering the rapid rise and its influence in various spheres, a new wave has begun to aid the military sector with AI. US retained dominance in the area of AI due to its technological edge over all other States which resulted in security dilemma for other countries. Russia's Chief of General Staff, General Valery Gerasimov, also predicted "a future battlefield populated with learning machines." Defense Minister Sergei Shoigu put a finer point on it, calling for civilian and military designers to join forces to develop AI technologies to "counter possible threats in the field of technological and economic security of Russia." Recently, China has accelerated its ambitions and endeavors in order to modernize its military to a new level in order to break the existing status quo and take the lead. China has now started to employ AI into its military. Consequently, Chinese advancement will have repercussion on the regional as well as at international level. Given the fact that the Chinese advancement in military domain is never overlooked by India at any time shall lead to a never ending strategic chain reaction. This has created a situation in which India has re-calculated its military doctrine and has decided to integrate AI in order to consolidate the military sector.

The aforesaid upgradation of Indian military doctrine evidently reflects in its recently released Land Warfare Doctrine (LWD) 2018.[2] This raises serious concerns for Pakistan as well as it cannot simply ignore this approaching threat. India's belligerent and aggressive policies have always been concerning for Pakistan. The strategic chain reaction has the potency to travel from US, China, and India only to eventually reach and influence Pakistan sooner or later. This research paper is an attempt to analyze the impetus and the repercussions of the race of AI in South Asia in general and Pakistan in particular.

Rational Behind Militarization of AI

AI is a revolutionary technology with respect to the defense sector. It brings along strong level of autonomy in warfare. In order to gain comparative advantage with respect to adversary, states have opted to incorporate AI into the military sector. The accelerated approach towards militarization of AI by a number of states has sprouted due to the reason that it steers along an unparalleled amount of efficiency with it. It surpasses human intelligence by manifold which consequently leads to enhanced sophistication and the minimization of errors. Ergo, it is seen as a tool by the major powers to steer the balance of power in their favor. The first section of the paper is focused into analyzing the reasons which drive China and India to militarize AI.

China lags behind US in terms of military by a colossal gap. US spends approximately 600 billion dollars on its defense while China spends around 250 billion dollars. Hence, for China to bring parity with US is an arduous task. However, China acknowledges the fact that by making advancements in AI within the military sector, it can mitigate this gap between the US and itself. The reason lies in the notion that once the military sector is accompanied with AI, it makes progress by leaps and bounds (Matt Field, 2019). Moreover, this progress is coupled with a high level of accuracy, surprise and efficiency. An engaging aspect of AI is that it erodes the pertinence of the previous weaponry. For example, an aircraft carrier is contemplated as an emblem of military ascendency but AI-backed missiles, jets and submarines can eventually sink the carrier.

[2] Army Doctrine Publications by the Indian armed forces pointing out the contemporary challenges faced by the armed forces and measures to overcome them.

Thereby, the carrier itself becomes a vulnerable floating target of AI. Hence, instead of building more tanks, aircraft carriers, and augmenting the quantity of such weapons, China is playing smartly and investing more in AI to increase the level of sophistication of its military to deal with its competitor, US (Allen, 2019). It is not proceeding towards levelling the stockpiles of nuclear weapons made three decades ago, rather it is going for the latest technology which will offer a much more credible deterrence such as supersonic missiles, hypersonic missiles and autonomous submarines etc.

Moreover, in recent times US has also started to accumulate AI into the military sector. As a result, the efforts increased to a large extent in order to keep up with the US and forestall US aims to widen the gap between the US and China in military terms. US has also been advancing with 'Lethal Autonomous Weapons Systems (LAWS)'[3] more generally known as Killer robots, which can be defined as systems that can impose an act of deadly use of force in land, air or underwater, without any human intervention i.e. they are completely autonomous. They have the capability and competence to detect and discern the target themselves and attack simultaneously. US has been a strong proponent of killer robots and has been an obstacle in passing a U.N resolution which poses a ban on these weapons (Gayle, 2019). Despite the dangers posed by such weapons, US continues to reinforce their usage and continues to divert its resources to excel in making of such weapons. In view of all these developments, China started to invest heavily in the military sector in order to avoid lagging behind the US Hence, it has to catch up and outdo the US military simultaneously and therefore it is advancing and consolidating its AI driven military arena at a rapid pace (Wood, 2016).

Technological ascendency has been retained by US for a long time. In the wake of novel challenges that might infringe the status quo, US has deployed an 'Offset Strategy'[4] to flip the balance into its favor with respect to military technology. US had previously incorporated AI in weapons such as drones. However, drones involve a limited level of AI due to the reason that the main control center is handled by a human being. In the contemporary times, US has pursued to consolidate its military sector with completely autonomous weapons. In 2014, the Secretary of Defense Chuck Hagel formulated a scheme to initiate a 'Third Offset Strategy' which aimed to intensify the level of AI in the current military technology. The rationale behind this was to sustain the US leverage in military in the face of current threats from potential rivals such as China and Russia who are in full swing to modernize their respective militaries (Jesse Ellman, 2017). The Third Offset Strategy consists of an amalgamation of technology with military operations in order to aid the conventional deterrence (Lange, 2016). Moreover, it also includes cyber defense, electronic warfare and surveillance of social media. The overall purpose of the strategy is to sustain a credible deterrence for future. Hence, China seeks AI to counter this Third Offset Strategy and eliminate any obstruction in its way to military supremacy.

Moreover, China has overlying claims of sovereignty in the South China Sea with a number of states such as Indonesia, Philippines, Vietnam, Malaysia, and Taiwan. The importance of South China Sea for China is a secret to none. With the surging involvement of US and its allies in the contested waters, China suspects that tensions

[3] Autonomous robots programmed to tackle their target without any human assistance.

[4] A competitive strategy seeks to attain leverage over a potential adversary through technological advancement.

might soar in the coming times, therefore AI can aid China in maintaining its leverage over the South China Sea. For example, maritime drones and submarines could prove crucial roles in playing monitoring roles (Hall, 2018). This will consolidate strong deterrence and force other parties to re-evaluate their strategies and thereby US and its allies will eschew from unnecessary mobilization in the South China Sea. Moreover, a deep sea base is being developed by Chinese military and it could be used to track and examine the movements of foreign ships and it would be equipped with the capacity to execute operations against rivals ships, air-craft carriers etc. (Zhen, 2019). This shall play a great role in the detection of US submarines in the region and consequently undermine the comparative naval advantage that the US enjoys at the moment. More importantly, apart from the surveillance operations, China has planned to keep a nuclear arsenal in the deep sea base which will increase the nuclear deterrent capacity of China to a great extent.

There have been repeated comparisons between China and the Soviet Union, drawing parallels of how both of them have used technological innovations to conquer their desires of hegemony. However, there are stark dissimilarities between both the cases. Soviet Union used to play with that technology which it acquired from the west through illegal means. China on the other hand has well established industries and does not lean on foreign countries for support (Allen, 2019). In the initial stage they might seek help from the western technology but only to imitate it and come up with something even better. Thus it is the domestic support from Chinese companies such as Tancent, Alibaba and Baidu which makes Chinese endeavors towards AI sustainable.

The source of AI is usually the private sector comprising of different companies. As a result, for AI to advance in the military arena, there needs to be a strong cooperation between the government and the private sector. In China, the private companies do not have the privilege of not cooperating with the government. Therefore, the private sector conforms to the demands of the government readily. Hence, this is one of the reason that China is revolutionizing its military at a fast pace, as there is a very apt environment contrary to other countries such as the US which has to endure certain obstacles in order to sway the private sector to cooperate with the government on issues of militarization of AI; given the fact that private companies often turn down the governments demands to help them in weaponization of Artificial Intelligence.

Paving way towards global hegemony calls for a robust military, strong economy and power projection. The Chinese economy is already proceeding towards a steady rise. By 2035, the economy is envisaged to amplify by leaps and bounds. Economically, it might be ahead of the US in the next three to five years (Champion, 2018). By coupling the economic growth with the military advancement, China wants to see itself as the subsequent global hegemon. Therefore in order to qualify all the characteristics of a global hegemon, it is looking forward to consolidate its military sector to the next level and ultimately surpassing all other states and particularly the US

India's Quest for Artificial Intelligence

The Indian Land Warfare Doctrine, issued in December, 2018 places extensive emphasis on integrating AI in the armed forces. The development of autonomous weapons by the Department of Defense and Research (DRDO)[5] commenced in the

[5] An Indian agency, established in 1958 with headquarter in New Delhi. It is charged with the task of conducting research and development for the Indian armed forces.

preceding years. However, due to the evolving developments in the region, India has accelerated its endeavors towards modernization of its military. China, the immediate neighbor of India has made stupendous progress in AI. India who anticipates China as a threat due to the historical experiences and the China-Pakistan nexus, is now in full swings to utilize AI in the military sector to consolidate it (Kaur, 2018).

China has made a significant breakthroughs in AI and is outdoing other states. For example, China is investing heavily on underwater drones, unmanned aerial vehicles and autonomous drones such as the Blowfish 2 drone[6] which can be armed with AK-47 (Awford, 2019). Furthermore, in 2018, China has engaged to work on the autonomous submarines which will be far better at identifying targets then the current submarines, which will not need refueling for years and could easily perform without being detected (Prosser, 2018). In this view, the Indian Army Chief, Bipin Rawat has repeatedly accentuated the point that the armed forces should employ AI to attend to threats in various arenas. Bipin Rawat pointed out that "since our adversaries are revolutionizing the scope of their defense capacities, it is better that we catch up with them before it is too late." Taking this notion into account, efforts have been brought into play to bring reforms in the Indian armed forces.

India has made tremendous amount of progress in its space program. However, India sees that since China has the capability to destroy its satellites India should establish credible defense systems synchronized with AI in order to resist any hostile attempt by China (Reddy, 2016). India is triggering an unnecessary and expensive arms race in the region without considering its consequences. Its rapid military modernization without having any direct threat from China is only endangering the security of the entire South Asian region. Chinese developments are not intended to be used against India. However, India in its quest for regional hegemony, has historically made uncompromising efforts to alter the status quo without considering its long term implications.

Despite the fact that India frames China as the main impetus to militarize AI, the underlying ambitions are directed towards Pakistan as well. Relations between India and Pakistan have always been fraught. Even though both of these countries now possess nuclear weapons, the importance of conventional weapons is not irrelevant, rather it remains even more pertinent due to the minor skirmishes that both countries experience. India could resort to AI to gain leverage over Pakistan by using autonomous weapons in the conflicts that both states get involved into, taking advantage of the fact that conventional weaponry cannot outdo autonomous weapons. Moreover, India could mitigate the shortcomings that it has to deal with given its current weaponry. For instance when Pakistan retaliated after the Balakot fiasco, as Wing Commander Abhi Nandan[7] was approaching the Line of Control (LOC), he was directed by the air control center to escort the plane backwards. However, the reason that he was unable to comply with this instruction was for the reason that he could not pick up the message due to the copious jammers in the adjacent territory. On the other hand, artificial intelligence remains void of such technical glitches and could be more productive. In addition to the aforesaid, the integration of AI will also ease the process of conducting cyber-attacks on Pakistan with great deception. Likewise, heavy surveillance can also be executed since autonomous drones can monitor around more than 250 kilometres into

[6] An unmanned stealth drone capable of being equipped with weapons.

[7] The pilot who was taken in Pakistan's custody after his plane was shot by the Pakistan Air Force following the air encounter between India and Pakistan on 27th February 2019.

enemy's territory. This will result in various espionage activities. In addition, taking into consideration the economic conditions of Pakistan, India finds AI instrumental in order to further broaden the gap in the conventional warfare with Pakistan and at the same time impose an expensive arms race in the region generally and with Pakistan in particular. The Indian government exaggerates the threat from Pakistan in order to achieve their own political interests. Hence, this technological revolution will be sellable to the public to associate an anti-Pakistan narrative with themselves and enjoy a leverage in the upcoming elections.

One area where India might imitate the Chinese form of governance is the surveillance on its citizens especially in the Indian-Occupied Kashmir (IOK). The atrocities that are committed by the Indian armed forces such as killing and blinding the innocent citizens have generated a huge resentment amongst the people of Kashmir, who have consequentially galvanized their freedom struggles. In order to keep a check on their activities, India might opt for severe artificial intelligence-backed surveillance to suppress their movement for freedom. Moreover, in future instead of sending military men, autonomous weapons might be utilized to curtail the Kashmiri endeavor towards freedom. Another reason that India has emphasized to employ AI in the defense sector is that it can take huge advantage in the border surveillance. India, being surrounded by neighbors with whom it does not share a good history with, often experiences skirmishes along its border. In order to have a presence at the borders without the heavy deployment of army personnel, night vision devices are being deployed at the LOC to detect any movement by the opposite side and to warn the Indian soldiers of any suspicious activity (Bhatia, 2019). As a result, India would save sending a large number of soldiers in complex and complicated terrains and it has the potential to prove better than the routine patrolling.

Likewise, surveillance method can be applied to the Line of Actual Control (LAC) as well, the line separating Chinese controlled and Indian controlled region of the former princely state of Jammu and Kashmir. Moreover, China has extended its claim over Utter Pradesh since 2000 (Bachhawat, 2013). Hence India wants to maintain the presence of heavy military and eventually AI seems to be a good option. Moreover, incidents like the Doklam crisis[8] have provoked India step up the means of surveillance at the borders.

The US, Russia and China are investing heavily in AI. China and India envision each other as key regional players. In order to build up the image of the major power, India is now resorting to artificial intelligence. Particularly, in the view of the armed forces who propagate the narrative that if India does not initiate employing artificial intelligence in near times, there will exist a prodigious gap between itself and its adversaries in the region which would be burdensome to narrow down and would impede India from attaining a prime role in the world affairs. Furthermore, despite the fact that China is rising, there would not be a 'Unipolar Moment', rather a multipolar world will emerge and India wants to be part of that. Therefore to portray itself as one of the major powers in the world, it has inclined towards the militarization of artificial intelligence.

[8] A military encounter between the Chinese and Indian armed forces in 2017.The source of the conflict was the Chinese construction of a road in Doklam, a disputed area between China and Bhutan. India entered the conflict on 18th June 2017 in the protest of the construction. This incident greatly strained the relations of both of the countries.

The domestic technological advancement of India further facilitates a favorable environment for the militarization of artificial intelligence. India has a strong backbone in the information technology and has a vast number of experts in artificial intelligence. In addition, private companies are also willing to help the armed forces to incorporate AI into the defense sector. Mr. Chandrasekaran, the owner of Tata Sons has demonstrated readiness to facilitate the armed forces with the modernization which reflects on India's seriousness to engage with the rising influence and utility of artificial intelligence.

The Indian government announced in 2018 that the efforts towards the merger of defense capabilities with AI are already on the go and soon it will be precipitated in the form of advanced autonomous weapons. The department working on advancing the AI is known as Center for Artificial Intelligence and Robotics (CAIR) which was established by Defense Research and Development Organization. Multi Agent Robotic Framework (MARF) is in the development stages which would act like a team of soldiers and would assist the Indian Army (ibid). Rustom II, an unmanned aerial vehicle was claimed successful on February 2018 (Ray, 2018). This drone has the ability to carry on surveillance to a distance of 250 km. The Indian armed forces also possess 200 of DAKSH Robots. These robots are autonomous in nature and are capable of diffusing bombs in dangerous locations in addition to overcoming complicated terrains (Une, 2018). Muntra, the first unmanned tank was launched in Chennai Labs in 2017. There are different variations of Muntra such as Muntra S, Muntra N and Muntra M for surveillance, to operate in areas where the nuclear risk is high and to detect mines respectively (Cholan, 2017). Hence, this chase towards military modernization is swiftly picking ground and the endeavors will accelerate in the coming future.

Implications for Pakistan

Pakistan and India are facing number of challenges which are affecting their bilateral relations as well as regional dynamics, both directly and indirectly. Constant threat of war between the two archrivals has proved detrimental to regional peace and security. In view of all this, India's rapid military modernization is further fueling the arms race and insecurity in the region as well as internationally. India is also receiving military and technological assistance from the US under various agreements which will have serious implications in near future. US under its Pivot to Asia or Rebalancing Asia doctrine is only focusing on China and is trying to arm India against it however, it is ignoring the serious implications that this may have in near future.

Emerging trends of AI in South Asia cannot be overlooked by Pakistan. The prospects that India will incorporate the AI technology in the military sector is no more a secret as stated in Land Warfare Doctrine 2018. This will not go without Pakistan re-evaluating its stature in the spectrum of AI. Recently, in the wake of Balakot strikes, the Indian leadership has signaled its war hysteria. Hence the strategic patterns will undergo a dramatic shift in the coming times. Considering the current state of Pakistan, it can be stated that it is lagging behind in the race of AI by an astounding margin. Pakistan has made some progress in the technological sector but it is still far behind other states. There are various reasons behind this incapacity in the race of artificial intelligence, such as lack of resources, data, IT experts and the curriculum being taught in Pakistan which lacks the amount of mathematics required in artificial intelligence.

Consequently, even less advances are being implemented in the military area. The efforts in armed forces rely on Pakistan continues to rely on increasing the amount

of conventional weapons that it has. Secondly, Pakistan continues to strengthen its nuclear deterrence on the basis of minimum credible deterrence through the qualitative improvement in its arsenals. Henceforth, it is focusing less on artificial intelligence as a major component of its military strategy. Pakistan will have to face the consequences of Indian advancement at two levels i.e. economic and strategic. In 1998, both India and Pakistan became nuclear powers. The attainment of nuclear weapons paved a way to deter the arch rivals against each other. This led to the materialization of deterrence stability in the South Asian region. Deterrence stability is based on a two-pronged agenda i.e. circumventing the war in the first place and attaining escalation control in case a crisis transpires. The deterrence stability has averted the break out of a full fledge war between both of the states. However, if India expedites with its AI ambitions, it might badly damage the deterrence stability which currently exists in South Asia. This is so because this added capacity does not correspond to the added deterrence rather it has a negative impact leading to suspicions and ultimately proceeding towards a stage where both sides indulge in an inevitable arms race. The damage inflicted upon the deterrence stability would provoke counter measures by the Pakistani side which will galvanize full efforts to step up with AI. For instance, since India is advancing towards the development of autonomous aerial weapons, Pakistan would most likely follow suit. Consequently, India would go towards the development of defense system from such attacks which would result in Pakistan repeating the same pattern.

Moreover, the prospects of the amalgamation of nuclear weapons with AI is already on the table. A nuclear-powered torpedo is being developed by Russia which would be able to maneuver all kinds of defenses on its way to the target (GROLL, 2018). The chances run high that similar patterns might reflect in South Asia. Pakistan and India have a history of indulging in minor conflicts repeatedly. So far, nuclear deterrence has proved to be a credible instrument in preventing the eruption of a full fledge war. If India develops AI capabilities in the military sector, then chances of early escalation are going to soar as even a minor incident could evoke a robust response from the autonomous weapons. For example, autonomous aircrafts have an absolute control in deciding which areas to target and how deep to penetrate into the enemy's territory. Apart from the legal issues protruding in this scenario, threats to the command and control strategy are concerning and serious. Thereby, these new technologies can result in crisis that might be strenuous to deal with. Hence, Pakistan will also proceed towards military modernization in order to avert being prone to Indian attacks.

AI is quite an expansive realm and it requires prodigious resources. This is due to the protracted amount of processing time on Graphic Processing Unit (GPU)[9]. In order to understand the nature of its expensiveness, consider a student working on a thesis project related to artificial intelligence. The testing process of that project requires 5000 Euros. Hence, it is a costly business. Taking into consideration the economy of Pakistan, the current state does not present a stable situation and is expected to decline further in the days that follow. The defense budget for the year 2018-2019 is Rupees 1.1 Trillion which is 3.2% of the GDP. Moreover, the defense budget has seen an increase of 18% with respect to the last year. Apart from this, there are other spending which are excluding this figure (Syed, 2018).

In the light of the approaching threat, Pakistan will have to stretch its defense budget even further. Consequently, resources will have to be diverted towards an arms

[9] An electronic circuit which is designed to alter memory to speed up the creation of images in a frame buffer intended for output to a display device.

race that is being initiated by India. The Indian armed forces have not disclosed how far they will go with the modernization of its military and how much capital they are going to spend on it. This further widens the ambiguity with respect to the extent that Pakistan will need to proceed on with artificial intelligence in order to reap in credible deterrence. In such circumstances Pakistan will have to divert resources for artificial intelligence which will hurt the economy of Pakistan. The arms race will have an impairing effect on the economy of Pakistan as revolutions in militaries come at high cost. Hence, the capital that could be used for the welfare of the common man would have to be spent to revolutionize the military in the wake of this race that India is instigating.

Lastly, Artificial Intelligence is sustainable only when it is home-grown. On the other hand, when it has to be outsourced through another country, the expenses become mounting. This is the reason that the arms race in AI if initiated, will be an expensive as well as a never-ending one as there would be repeated efforts by both sides to advance their weaponry one after the other. However, one cannot ignore the fact that despite its menacing nature, AI is going to be a pertinent issue in South Asia in the next decade. Taking this fact into consideration, Pakistan should reinvigorate its endeavors towards AI through the development of research centers in different universities and institutions solely devoted to the field. Moreover, universities should revise their curriculum to cope up with AI in order to produce AI experts who can help the armed forces of Pakistan avert any threat to national security. Despite the fact that it is a lengthy process, it is the only way that will lead to sustainable integration of AI with less onerous repercussions on the economy.

Conclusion

The major powers of the world are proceeding on the aisle towards AI. A new wave of technology revolution can be seen impending in a swift manner. The time when this revolution would diffuse to other states as well is not far away. However these patterns of militarization of AI if replicated in South Asia might not be a rational choice as the region is already turbulent with the presence of two arch-rivals whose histories are filled with bloody wars and episodic conflicts. Tensions soar high between both of these countries repeatedly which have led to their engagement in minor skirmishes. However, leadership from both sides do realize that none of the countries can afford a full fledge war. In this view, in cases where conflicts reach climax, immediate efforts towards de-escalation are observed to avoid any major damage to the national security of both countries. For example, in the Kargil incident[10], once the situation turned critical, the US stepped in to pacify the situation. However, it must be noted that weaponry triggered on the basis of AI is devoid of any such margin for the de-escalation phase.

With the institution of AI capabilities in military strategies, the dimensions of crisis management would be altered. The reason for this is that the time required for AI-backed weapons is so minute that it does not allow adequate margin for appropriate decision making. The response from these autonomous weapons would undermine the rational decision making which tends to calm things down in the period of elevated tensions. This comes with a high cost of escalation that might erupt into a critical incident and might prove difficult to control.

[10] A limited armed conflict between India and Pakistan which took place between 3rd May and 26th July 1999.

The strategic potential of this new evolution is being undermined by India. Militarizing AI by countries like China and the US does not pose a threat to the international security just as the nuclear arsenals of France and Britain are not a matter of great concern for the international community. However, if India and Pakistan are considered, then the nature of the bilateral relationship, leadership, and the internal instabilities do not create the space for both countries to carry out an adventurous journey on such a dangerous pathway. Similarly, this region is characterized by nuclear power states. Given the lethal capacity of nuclear weapons, militarizing AI should be the last resort as it would complicate the strategic stability in the region and could lead to inadvertent usage which could account for an apocalyptic episode with the spin-off lasting for decades.

Indian Prime Minister Modi has initiated a round of adventures to boast up his political stature and associate an anti-Pakistan narrative with himself, which he has used to attract his voters. The revolution of the military was announced few months before the Indian elections 2019, hence it can be analyzed that this was more of a political gesture then a military one. This revolution has come at a time when India was not facing any obvious threat. However, the war-hysteria of its leadership has added to the risk to regional stability. This will initiate another arms race in the region and both countries will have to spend massive amount of resources in order to play with this. Hence, efforts should be made to curb this treat instead of intensifying it. On the other hand, since India is driving this technology into South Asia, Pakistani government should assist the academic sector in order to make advances in AI and at the same time should finance AI related start-up projects which can later on provide a base for the military modernization. The rationale behind this is to assure that deterrence remains fortified despite Indian efforts to fracture it.

References

Allen, G. C. (2019). Understanding China's AI Strategy. *Center for New American Security: Clues to Chinese Strategic Thinking on AI and National Security*. Retrieved from https://www.cnas.org/publications/reports/understanding-chinas-ai-strategy

Awford, J. (2019). China is Unleashing Killer Robots and Stealth Drones that Carry out Targeted Airstrikes without a Human Pressing the Fire Button. *The Sun*. Retrieved from https://www.thesun.co.uk/news/8394455/china-killer-robots-drones-airstrikes-autonomous/

Bachhawat, A. (2013). China's Arunachal Pradesh Fixation. *The Diplomat*. Retrieved from https://thediplomat.com/2013/12/chinas-arunachal-pradesh-fixation/

Bhatia, R. (2019). India Doubles Down on Use of AI in Defence with AI-Enabled Night Vision Device. *Analytics India*. Retrieved from https://www.analyticsindiamag.com/india-doubles-down-on-use-of-ai-in-defence-with-ai-enabled-night-vision-device/

Champion, M. (2018). Does China Have what it takes to be a Superpower? *Bloomberg*. Retrieved from https://www.bloomberg.com/graphics/2018-china-superpower/

Cholan, R. R. (2017). Defence. *Muntra India's First Unmanned Tank*. Retrieved from https://www.iaspreparationonline.com/muntra-indias-first-unmanned-tank/

Gayle, D. (2019). UK, US and Russia among those Opposing Killer Robot Ban. *The Guardian*.
Retrieved from https://www.theguardian.com/science/2019/mar/29/uk-us-russia-opposing-killer-robot-ban-un-ai

Groll, E. (2018). How AI Could Destabilize Nuclear Deterrence. *Foreign Policy*.
Retrieved from https://foreignpolicy.com/2018/04/24/how-ai-could-destabilize-nuclear-deterrence/

Hall, J. (2018). AI in the South China Sea. *Global Risks Insight*.
Retrieved from https://globalriskinsights.com/2018/12/artificial-intelligence-turning-tide-asia-pacific/

Jesse, Ellman. (2017). Assessing the Third Offset. *Centre for Strategic and International Studies*. Retrieved from
https://csisprod.s3.amazonaws.com/s3fspublic/publication/170302_Ellman_ThirdOffsetStrategySummary_Web.pdf?EXO1GwjFU22_Bkd5A.nx.fJXTKRDKbVR

Kaur, S. (2018). AI Race: China and US in the Lead, Where Does India Stand? *News Click*. Retrieved from https://www.newsclick.in/ai-race-china-and-us-lead-where-does-india-stand

Lange, K. (2016). 3rd Offset Strategy 101: What It Is, What the Tech Focuses Are. *DoD Live*.
Retrieved from http://www.dodlive.mil/2016/03/30/3rd-offset-strategy-101-what-it-is-what-the-tech-focuses-are/

Matt, F. (2019). China is rapidly developing its Military AI Capabilities. *Bulletin of the Atomic Scientist*.
Retrieved from https://thebulletin.org/2019/02/china-is-rapidly-developing-its-military-ai-capabilities/

Prosser, M. (2018). China Is Building a Fleet of Autonomous AI-Powered Submarines. Here Are the Details. *Singularity Hub*.
Retrieved from https://singularityhub.com/2018/08/15/china-is-building-a-fleet-of-autonomous-ai-powered-submarines-here-are-the-details/

Ray, T. (2018). Slow and Steady: India's Tentative Steps Into the AI Race. *The Diplomat*.
Retrieved from https://thediplomat.com/2018/.../slow-and-steady-indias-tentative-steps-into-the-ai-race

Reddy, R. S. (2016). India and The Challenges of Autonomous Weapons. *Carnegie India*, 10. Retrieved from
https://carnegieendowment.org/files/CEIP_CP275_Reddy_final.pdf

Sen, S. R. (2018). Cyber attacks becoming more frequent in India. *Hindustan Times*.
Retrieved from https://www.hindustantimes.com/india-news/cyber-attacks-becoming-more-frequent-in-india/story-8Os6AtCrHzL6QCBinVQuSM.html

Syed, B. S. (2018). Budget 2018-19: Rs1.1 trillion proposed for defence. *Dawn*.
Retrieved from https://www.dawn.com/news/140433/.

Une, M. M. (2018). AI in Defense Sector. *International Research Journal of Engineering and Technology (IRJET), 5*(6), 2683.

Wood, P. (2016). Chinese Perceptions of the "Third Offset Strategy". *The Jamestown Foundation* Retrieved from
https://jamestown.org/program/chinese-perceptions-third-offset-strategy/

Zhen, L. (2019). Time for Tougher Deterrence from China' as US Steps Up Patrols in South China Sea. *South China Morning Post*. Retrieved from https://www.scmp.com/news/china/diplomacy/article/3003895/time-tougher-deterrence-china-us-steps-patrols-south-china-sea

Exploring 'South-South' Technology Transfer Perspective for Regional Development and Stability: A Case of China and Pakistan

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Masooma Jafri[1]

Abstract

Historically, there was a traditional North-South paradigm of technology transfer under which the developed part of the world had the capability and authority of technology transfer to the relatively less developed and developing states. However, this was challenged by China which rose as an economic power and reversed the technology transfer paradigm (South-North technology cooperation). Chinese innovative policies have made it a world power and the source of technology transfer to the developing part of the world thus forming the South-South technology transfer network. China has earned the status of world lender and project financier through its One Belt One Road project and through CPEC Pakistan has become the recipient of more than $46 billion of Chinese FDI. This provides Pakistan with ample of opportunities of technology transfer and boosting its economy. However, only the implementation of balanced economic and technological policies can lead to fruitful results for the donor as well as recipient state.

Keywords

China Pakistan Economic Corridor (CPEC), South-South technology transfer, One Belt One Road (OBOR)

Introduction

China is gaining the status of the centre of the world stage by becoming the second largest economy along with taking the lead in science and technological innovation (Petras, 2012). With this continued progression, China has not been reluctant to share its technological achievements with other states and the technological transfer from China to the South is the result of Chinese openness to share its technological achievements.

In its pursuit of development and technological innovation, China has adopted emerging fields such as renewable energy, advanced nuclear energy, space technology and new generation telecommunication technologies, along with the innovations in the conventional fields such as automobile, electronics, etc. (Liu, Simon, Sun, & Cao, 2011). China's technological capabilities are increasing over time and the state is keen to reach the top level expertise, and achieve the financial firepower which could realign the power structure making China the center of the global technology industry. Chinese firms have been a long way from being fast followers in terms of technology and have

[1] Masooma Jafri has formerly been associated with the Institute of Policy Studies (IPS), Islamabad as a Research Associate. She is currently serving as Associate Editor, NUST Journal of International Peace & Stability (NJIPS).
E-mail:masooma.jafri12@gmail.com

transformed into true innovators (Brewer, 2007). The state has transformed its market-oriented economic approach to an innovative approach which focuses more on science and technological innovation which emphasize on the policies which encourage progressive fiscal measures. This transformation is evident in the evolution of economic policies of China and most importantly from the Medium and Long-term Plan for the Development of Science and Technology (2006-2020) policy of the state (Lam, 2017). Now there has been a shift from the traditional pattern of innovation strategy where only one government agency was responsible for the formation of innovation policies to a more promising innovation trajectory in which a number of government and local agencies are involved in the process. The consumer appetite and the government support have made the technological dominance of the Chinese firms possible. Along with this, Chinese research in disaster prevention, rice breeding technology, meteorology, etc. has assisted many partner states to increase their income. Among other Asian and African states, Pakistan, through CPEC and related deals, has benefited a lot from Chinese research in these fields (Dudley, 2019).

Whilst China is continuing its quest for technological innovation, it is also becoming a source of technology transfer for the South and the developing countries. Most of these states which look up to China, for Technology Transfer (TT) aim to benefit from China's technological innovations. Such states including Pakistan have been engaged in projects with the Chinese government under the Chinese One Belt One Road Initiative. Pakistan, being part of the Chinese OBOR project and a close friend of China can most certainly benefit from the technological innovations of China and engage in successful technology transfer (Abid & Ashfaq, 2010). Under its Belt and Road Initiative, the Chinese Academy of Sciences has provided more than 1.8 billion yuan for the science and technology projects in the African and Asian countries which are partners of China under the OBOR project (Ille, 2009). Such initiatives on part of China depict that the state is keen to invest in technological development along with showcasing its strengths in manufacturing, infrastructure development and financial power. This would serve both the donor and the recipient but most importantly it would change the political and economic landscape of Asia; the most economically vibrant region of the twenty-first century.

The paper discusses the traditional technology transfer paradigm and the drastic shift that China has managed to ascertain in the technology transfer regime. It further discusses the Foreign Direct Investment that Pakistan is receiving from China and the spillover effects of such investments. Whilst discussing the Chinese drive for innovative technology, the article explores how Pakistan can benefit from Chinese quest.

Technology Transfer Paradigm

Most of the under developed and developing countries have lesser capabilities to create original innovation, mainly in the energy sector. This places them at a strategic disadvantage, because now a days energy innovation has become crucial for lessening energy poverty, along with increasing energy security in order to build an energy sector. Such an energy sector has become necessary for state survival as it reduces greenhouse emissions and proves to be resilient to climatic distress as well. Many scholars (Brewer & Mani, 2008; Osano & Koine, 2016; Brewer, 2007; Urban, 2018) have tried to highlight the importance of technological innovation and the diffusion of technology through international means of technological transfer. Such scholars have highly

emphasized on the 'technology transfer paradigm' as the main means of technology diffusion to developing states.

As far as the definition of technology transfer is concerned, the same term is also understood as technology cooperation between and within states. However, the International Panel on Climate Change describes the term as an extensive set of processes which encompass the understanding, operating and reproducing the technology. The technology could further be adapted to the local environment and with indigenous technological developments (Jaffe, 2018).

In the past, the traditional understanding of term 'technological transfer' was limited to the transfer of hardware technology (Yanning, 2018). The software technology transfer and the issues related to it were completely ignored. The software technology includes processes which are obligatory for creating, operating and maintain the technologies and are related to the knowledge, skills and expertise to comprehend the technological innovations (Vishwasrao, 1997).

The process of technological transfer was initially limited only to the traditional North-South model, in which the North being the technological innovator transferred the modern technological trends to the South, which was either under developed or developing. However, now a days, due to the rise of emerging economies like India, South Africa, Brazil and China, the technology transfer and technology cooperation has become a broader approach (Corvaglia, 2014).

Due to such shift in the world dynamics and new emerging technological centers, the technology transfer is divided into four geographic courses, (1) From North to South (e.g. European states to China), (2) From North to North (e.g. US to European states and vice versa), (3) From South to North (e.g. China to European states) and (4) From South to South (e.g. China to Asian and African states) (Mason, 2019).

Technology transfer and technology cooperation related to China predominantly include collaborative approaches between China and the receiving state. Such collaborations include overseas development assistance, joint ventures, foreign direct investment, etc. These technology cooperation also include exchange of skilled labor, joint publications and formation of new networks. Apart from the specifics of technological innovations, the flow of technology transfer varies from states to state, for example, the duration of technology transfer varies across states and the direction of flow can either be vertical or horizontal in states depending on the circumstances and the capabilities of the receiving states (Brautigam, 1993). Technology transfer can be of skills and expertise on operating and maintaining technology, the modern equipment and most importantly the knowledge for technological innovation.

Although the debate on technology transfer has been going on since 1980s (Sampath & Roffe, 2012), the South-North technology transfer and the South-South technology transfer has not been given much value. Contrary to which, North-South technology transfer has been the centre of the debate (Roffe & Tesfachew, 2014; Yanning, 2018; Urban, 2018). Most of the literature and scholarly research has been restricted to North-South technology transfer where the high income states transfer modern technology to low and average income countries (Vishwasrao, 1997; Series, 2001). Yet the sole reason for this is not the ignorance of South-North and South-South by the scholarly community but also lack of understanding in the South regarding the socio-technical transformations of technology. Roffe & Tesfachew (2014) argue that it is due to the economic rise of states like China that such bias notion is challenged. This has led to rebalance the shift towards the South-South technology transfer. The only

issue with this is that this topic is that the South-North technology transfer is not very well researched, which is why substantial evidence of this process remains an issue.

China's Role in Worldwide Technology Transfer

Over the past decade, China has developed a framework for exemplifying South-North and South-South model of technology cooperation and transfer. China has been the chief investor in hydropower, solar energy and wind energy. A report by the Institute of Energy Economic and Financial Analysis identified that China has been investing heavily in clean-energy projects and takeovers which account for more than $44 billion in 2017 (Series, 2001). The state has been increasingly investing in foreign territories and is strengthening its role in the global economy. Over the past few years, China has gained the status of overseas investor in the solar and wind industries (Timperley, 2018). The state has been able to increase its investments due to the favorable financial conditions, and certain push and pull factors resulting from the domestic environment and the conditions of the overseas markets. Initially the Chinese investments had been directed towards developed countries like Germany, Italy, Australia and United States but the trend is shifting towards and more South-South technology transfer model. Now China is keen in investing in Pakistan, Ethiopia and other South African states (Tan, Zhao, Polycarp, & Bai, 2013). China is becoming an unstoppable force in the global framework of technology transfer, and its approach to introducing innovation capabilities in the South-South and South-North technology transfer is defined by acknowledging the direction of capital flow to markets and the direction of technology leadership that the state has achieved.

FDI as a Source of Technology Transfer

Foreign direct investment has gained a major role in enhancing the economic development in the less developed states. FDI has been a source of upgrading the economy of a state due to its benefits in the form of transfers of technologies related to production of modern products and their distribution, their general knowledge, skilled labor force along with establishment of new networks. FDI have been the source of foreign technology diffusion and skilled human capital across borders (Djulius, 2017).

Among the early researches conducted on the topic, MacDoughall (1960) thoroughly argued about the possibility of the external spillovers accompanying foreign direct investment. However, after analyzing the recent literature on technology transfer and foreign direct investment, FDI is considered a prevailing source of technology transfer across states. It is argued to be the most comprehensive form of technology transfer from developed states to less developed or developing states (Perez, 1998). Along with provision of the technological equipment and information, it also provides with the necessary know-how to maintain, upgrade and employ the acquired technology. The technology transferred through foreign direct investment has significant impact on the domestic firms. There has been strong theoretical backing of the fact that technology transferred through the foreign direct investment has beneficial outcomes for the receiving states as their domestic firms adopt better methods of production (Aitken & Harrison, 1999).

Chinese Innovation in Renewable Electricity Generation Technology

Even though Chinese firms depend on coal as the source of their electricity generation, still the country aims to have 15% share of non-fossil fuels in its energy mix by 2020

(Caughill, 2018), which is why China is home to growing wind power industries. In 2010, China became the chief installer of wind power capacity in the world and its wind power technology industry is developing ever since (Matthews & Tan, 2014).

Chinese drive to renewable energy innovation has made it the world's largest producer, installer and exporter of solar panels, electric vehicles, batteries and wind turbines (Liu & Goldstein, 2013). This has led to the renewables revolution which has boosted China's global leadership and has brought energy independence to states (Dudley, 2012).

Chinese Foreign Direct Investment and South-South Technology Transfer

Chinese innovation policy coupled with the Go Far policy has led to many expeditions abroad. China is involved in 330 overseas dam projects with 38% in Southeast Asia and 26% in Africa (Aitken & Harrison, 1999). Such projects started in the 2000s, and have continued ever since, with more states willing to attain foreign Direct Investment from China. Chinese firms have become the lead actors in South-South Low-carbon energy technology transfer, mainly in the field of hydropower (Gebrehiwot & Demissie, 2018).

Poor Southeast Asian countries such as Cambodia which lack in power sector, Chinese investments are eagerly welcomed as they are seen as opportunities to attain modern technology and resultantly reducing energy deficiency. Under such underprivileged circumstances, Chinese built dams are considered as a sign of modernity and a prospect for better future (Brautigam & Xiaoyang, 2012). The OECD investors do not see Cambodia as a target state for FDI and technology transfer, however, Chinese investment in the state has offered opportunities which were rarely possible for Cambodia. However, the Kamchay Dam, which is Cambodia's first large dam, demonstrates that Cambodia has relatively little capacity to absorb the new large-scale technology and to sustainably manage its environmental and social implications (O'Neill, 2014). While the absorptive capacity for hydropower innovation is low, both production capabilities and innovation capabilities are largely absent. In the specific case of the Kamchay Dam, technology transfer of hardware has occurred successfully; nevertheless, the transfer of the 'software', such as the knowledge, skills, expertise and experience of how to plan for, build, manage and operate the dam sustainably, is lagging behind (ibid.). This is also partly due to the limited sustainability of the practices of the technology-transferring country. Learning from the case of Cambodia, Pakistan should enhance its absorption capacity in terms of technology transfer from China.

Pakistan-China relations started in 1950 (Miller, 2017) when Pakistan was among the first states which recognized the People's Republic of China and also assisted the new state in attaining the membership of United Nations. Since then, the close friendship of the two states has been exemplary. The trade relations have also been very pivotal and the Chinese exports to Pakistan have been extensively spread in terms of technological classification (Bhattacharjee, 2015). The composition of the Chinese exports to Pakistan are capital or intermediary goods which serve as improving the production capabilities of the state along with developing the technological infrastructure of Pakistan (Yusuf, 2013).

Foreign direct investment provides with better opportunities to developing countries which struggle through their way to economic growth and stable trade and investment relations (Kayani, Ahmed, Shah, & Kayani, 2013). In the case of Pakistan,

China Pakistan Economic Corridor (CPEC) is considered as an important spur for economic development.

The economic history of Pakistan has not been very stable and the state has continuously faced a lot of economic hurdles related to the inflow of FDI. Inadequate domestic resources, outdated technology, unskilled labor has caused the downfall of Pakistani economy. In such circumstances, FDI becomes a valuable feature which has the ability to transform the status of our economy as it brings with it modern technology, market-access and skilled human capital, which increases production rate and government revenue (Huang, et al., 2017). In the case of Pakistan, FDI could assist in improving employment rate, whilst upgrading the infrastructure of the state resulting in macroeconomic stability.

In 2019, Pakistan GDP growth rate is expected to hover around 5% (Rizvi, 2019) however, IMF has predicted that it will slow down to 2.9% (Ahmed, 2019) at the end of the fiscal year, which would be the lowest GDP growth rate in South Asia. This situation is politically and economically worrisome as well as unacceptable. The technological backwardness of Pakistan, unskilled human capital, and the increasing number of unemployed youth are indicating towards the weak status of the state's economy. Such circumstances make it a dire need for Pakistan to establish links with the foreign markets and engage them in technology transfer and cooperation. As far as China's FDI in Pakistan are concerned, the numbers have been modest in history.

However, due to shift in Chinese international policy and the greater OBOR plan, investments in Pakistan have increased, as a result of which Pakistan's industries have become more stable and the technology transfer has assisted the state to counter the energy constraints (The News, 2017). Such conditions are good for Pakistan as the state could improve and promote the technological sophistication of its tradable sectors through the inflow of FDI from China. It is proved by the successful East Asian experience that inflow of FDI secures local resources and further enhances the state's economic capacity by forming international value chains, thus resulting in economic stability of the state.

CPEC and the Technology Transfer to Pakistan

CPEC is the milestone of Pakistan-China friendship and cooperation. The project is expected to be the biggest investment in infrastructure in Pakistan. According to the project plan, by 2030 Chinese investment in energy, fibre optic and transport at the Gwadar port would reach a total of $46 billion (Bhattacharjee, 2015). The project has incited excitement in Pakistan as people are hopeful that the CPEC project would benefit the state. The CPEC contract includes four pillars of development, which are industrial development, infrastructural development, communications sector, and energy sector. The lease of Gwadar port along with a Free Trade agreement with China includes regional level gas and oil pipelines, which would also develop trade and economic activities for Pakistan. The agreement under the One Belt One Road project brings into limelight China's tangible interests in international investment regime which is now becoming more influential in the region (Brautigam & Xiaoyang, 2012). OBOR would work as a massive integration network for the Chinese economy with the world market, and Pakistan being the artery for this corridor can extract huge benefits for its economy as well. Pakistan's port city Gwadar provides the economic, maritime energy and land routes for the Chinese Silk Route which are considered the most crucial part of the project. This puts Pakistan in a better position to learn from the Chinese

innovation policies and through CPEC it can form a network for technology transfer as well (Mirza & Kanwal, 2017) In the series of MOU's signed between Pakistan and China and project agreements focused on infrastructure and energy, Pakistan has been able to secure $35 billion (Abid & Ashfaq, 2010) for energy sector. This can very effectively tackle the energy deficit that Pakistan is facing. The FDI which would is coming from China under CPEC is critical in nature as it would be a major source of capital and it brings with it up-to-date technology which will result in enhancing the economic capabilities of Pakistan. Currently, the inflow of FDI through CPEC is more than any foreign direct investment that Pakistan has received in its history.

Pakistan can accelerate its GDP growth through further collaborations with the Chinese firms. Through this, it could also be able to achieve considerably higher level of GDP than the average of 5 percent of the last sixty years (Rizvi, 2019). There is no doubt in the fact that achieving such a target in the current domestic headwinds would be a major challenge for Pakistan, but the most adequate step in this regard would be to strengthen the trade relations with the most important political ally and friend in the neighbourhood, China.

China is the only state which has achieved a per capita GDP growth rate of more than 7% (World Bank, 2019). China currently embarks a process of economic rebalancing which require a lesser dependence on the exports as a source of growth, which increases the share of the domestic consumption. This generally results in an increase of import demand. In such circumstances, Pakistan could benefit from the trade with China and the Chinese FDI. In addition to escalating its present mix of exports and expand its control over the value chain for Chinese products, China is resolute to broaden its horizons into high tech products and to technologically improve its exports (Dudley, 2019). For this purpose, China is rapidly developing its domestic technological capabilities so as to increase the technology incorporation from international states and to generate its own innovation capacity. China is actively indulged in getting hold of new and up to date technologies and is keen to make the most of the technology transfer through foreign direct investment by Multi-National Companies (MNCs) (Liu et al., 2011). This approach has led to many fruitful outcomes for China. The technological catch-up has proved to be phenomenal for the state and its brands are now making strong holds in the international market. Lenovo, Haier and many other Chinese brands are improving their technology impressively (Caughill, 2018). In its quest for better technology and trade market, China has employed an extensive effort to get hold on the most advanced yet unmodified technologies and has invested in foreign firms having valuable intellectual property, expertise in designing and manufacturing of sophisticated products. Chinese firms have also procured several American and European firms which have top notch technologies (Djulius, 2017). Pakistan can make arrangements with Chinese firms to collaborate with the Pakistani counterparts in exchange of sophisticated technologies and skilled labor.

The analysis of Chinese trade expeditions and its pursuit of getting latest technologies along with the Go out Strategy resulting in OBOR depicts that China is desperate to invest in states that can provide it with technology transfer and trade linkages (Miller, 2017). Pakistan, due to its strategic geographical positions holds a special position in this regard. China will continue to follow its technological interests; however, in attaining its objectives it is likely that it will serve Pakistan. The Chinese FDI could jump start the economic growth in Pakistan through its complementary infrastructure development.

Chinese investments and the extent of collaboration with Pakistan directs towards China as an influential international lender and project financier. This is not only due to the Chinese technological exploration; rather Pakistan and China have a pleasant history of diplomatic, military and economic relations which started in 1950s (Yusuf, 2013). The relations however, intensified in recent decades when both states realized their strategic and political importance against their common contenders. Xi Jinping's first visit to Pakistan was in 2015 when the President of People's Republic of China compared visiting Pakistan to visiting the home of a brother (The News, 2017). Chinese investments in Pakistan seem to be an extreme case depicting a perfect case of Chinese collaborations with its allies, CPEC being the centre piece of Chinese friendship. CPEC is hard to ignore as a poster child for China-Pakistan bilateralism in the 21st century due to both scale and extent of projects.

While what CPEC means for China is a gripping puzzle in itself, but more important are the innumerable repercussions for Pakistan. The recipient state in this association is a heavily populated nuclear power which is as one of the key developing states of the 21st century (ibid.). Its population is comparatively young, and it has an important geostrategic position at an intersection of South, Southwest and Central Asia, and the state currently faces a colossal energy and infrastructure development shortage (Ahmed, 2019).

Furthering the Chinese collaborations with Pakistan, Chinese International Technology Transfer Centre (CITTC) signed a MoU with National University of Sciences and Technology in order to establish the China Pakistan Technology Transfer Centre (CPTTC) (The Express Tribune, 2018). CPTTC will facilitate the technology transfer between China and Pakistan whilst providing soft-landing to the firms of both the states to facilitate the entry in each other trade markets. CITTC is a joint project of the Beijing Municipal Science and Technology Commission and the Chinese Ministry of Science and Technology which provides professional international technology transfer platform between China and other states across the globe.

Conclusion

The China-Pakistan Economic Corridor has provided Pakistan with a much needed opportunity to boost its developing economy and get hold of the up to date sophisticated technology. Pakistan has a huge potential with young people dominating half of its population. CPEC has provided Pakistan with a pathway to progress towards the Newly Industrialized Economies (NIEs). Chinese innovative technological expertise has benefited its economy making it capable of competing with the world economic powers, thereby; the Chinese firms can open up new trading routes, energy corridors and industrial zones for Pakistan to meet its rapidly growing needs.

Although, the CPEC is not limited to renewable energy, as coal power plants are a major part of the project, there are still major prospects to promote the renewable energy market through a range of corresponding policy initiatives. Therefore, there is still much to learn from China's endeavor in the renewable energy sector. The potential spill overs of CPEC that Pakistan will experience can be catalyst in leading Pakistan in the direction of the current global discourse in sustainable and low carbon development.

The transfer of knowledge and expertise can be attained from this collaboration with China in the renewable energy field, can be effectively utilized if the

state forms adequate policies which eases the flow of knowledge to the domestic industry. For this purpose, direct training programmes must be setup with China's cooperation. Win-win scenarios can be fashioned, when economical local workforce will be provided with the required skills and knowledge to work in the Chinese administered ventures in Pakistan. Furthermore, domestic production of renewable energy equipment should to be propped up through fixing market malfunctions and persuading domestic manufactures.

Currently CPEC is justified as the necessary boost up for the Pakistani economy, but government should not rely completely on one market and should explore more markets for trade and technology transfer. Pakistan's government has to be careful while dealing with projects under CPEC as when economic opportunities arise from the inflow of foreign FDI then there must be necessary steps taken to ensure the equal distribution of resources to all parts of the state. The conflict over the unequal distribution of resources is a much heated issue in Pakistan so projects under CPEC need to be secured from being affected by it. Policies like imposition of windfall profit tax on Chinese firms which extract minerals can direct the collected money to developmental projects in Pakistan. This can amplify the likelihood of equitable distribution and lessen the grievances of the people from deprived areas.

References

Abid, M., & Ashfaq, A. (2010). CPEC: Challenges and Opportunities for Pakistan. *Pakistan Vision , 16* (2), 142-169.

Ahmed, S. (2019, April 9). IMF Estimates Pakistan's GDP Growth to Slow Down to 2.9%. *Samaa*. Retrieved from https://www.samaa.tv/economy/2019/04/imf-estimates-pakistans-gdp-growth-to-slow-down-to-2-9/

Aitken, B., & Harrison, A. (1999). Do Domestic Firms Benefit from Foreign Investment? Evidence from Venezuela. *American Economic Review, 89* (1), 605-618.

Bhattacharjee, D. (2015). China Pakistan Economic Corridor. *Indian Council of World Affairs*, 1-15.

Brautigam, D. (1993). South-South Technology Transfer: The Case of Liberia. *World Development, 21* (12), 1989-2001.

Brautigam, D., & Xiaoyang, T. (2012). Economic Statecraft in China's New Overseas Special Economic Zones: Soft Power, Rusiness or Resource Security? *International Affairs, 88* (4), 799-816.

Brewer, T. (2007). Climate Change Technology Transfer: A New Paradigm and Policy Agenda. *Climate Policy, 8* (5), 516-526.

Brewer, T. L., & Mani, M. (2008). Technology Transfers and Climate Change: International Flows, Barriers, and Frameworks. *Brookings Trade Forum, Climate Change, Trade, and Competitiveness: Is a Collision* , 93-119.

Caughill, P. (2018). China Invested $44 billion in Overseas Clean Energy Projects Last Year. *World Economic Forum*. Retrieved from https://www.weforum.org/agenda/2018/01/china-invested-44-billion-in-overseas-clean-energy-projects-last-year

Corvaglia, M. A. (2014). South - South Technology Transfer Addressing Climate Change and its (Missing) International Regulatory Framework. *Carbon and Climate Law Review, 8*(2), 125-137.

Djulius, H. (2017). Foreign Direct Investment and Technology Transfer: Knowledge Spillover in the Manufacturing Sector in Indonesia. *Global Business Review, 18*(1), 57-70.

Dudley, D. (2019). China is set to become the World's Renewable Energy Superpower, According to New Report. *Forbes*. Retrieved from https://www.forbes.com/sites/dominicdudley/2019/01/11/china-renewable-energy-superpower/#260a5a82745a

Huang, C., Su, J., Zhao, X., Sui, J., Ru, P., Zhang, H., et al. (2010). Government Funded Renewable Energy Innovation in China. *Energy Policy*. doi: 10.1016/j.enpol.2011.08.069

Huang, Y., Fischer, T. B., & Xu, H. (2017). The Stakeholder Analysis for SEA of Chinese Foreign Direct Investment: The Case of 'One Belt, One Road' Initiative in Pakistan. *Impact Assessment and Project Appraisal, 35* (2), 158-171.

Ille, F. R. (2009). Building Chinese Global Brands through Soft Technology Transfer. *Journal of Chinese Economic and Foreign Trade Studies, 2*(1), 47-61.

Jaffe, A. M. (2018). Green Giant: Renewable Energy and Chinese Power. *Foreign Affairs.* Retrieved from https://www.foreignaffairs.com/articles/china/2018-02-13/green-giant

Kayani, F., Ahmed, M., Shah, T., & Kayani, U. (2013). China-Pakistan Economic Relations: Lessons for Pakistan. *Pakistan Journal of Commerce and Social Sciences, 7*(3), 453-462.

Lam, L. T. (2017). *Innovation in China's Renewable Energy Industry.* Pittsburg, PA: Carnegie Mellon University .

Liu, F., Simon, D. F., Sun, Y., & Cao, C. (2011). China's Innovation Policies: Evolution, Institutional Structure, and Trajectory. *Research Policy, 40*(7), 917-931.

Liu, J., & Goldstein, D. (2013). Understanding China's Renewable Energy Technology Exports. *Energy Policy, 52*(1), 417-428.

MacDoughall, G. (1960). The Benefits and Costs of Private Investment from Abroad: A Thoeratical Approach. *Economic Record, 36*(1), 13-35.

Mason, J. (2019). Exclusive: China Shifts Position on Tech Transfers, Trade Talks Progress- U.S. Officials. *Reuters*. Retrieved from https://www.reuters.com/article/us-usa-china-trade-exclusive/exclusive-china-shifts-position-on-tech-transfers-trade-talks-progress-us-officials-idUSKCN1R905P

Mathews, J. A., & Tan, H. (2014). Economics: Manufacture renewables to build energy security. *Nature*. Retrieved from https://www.nature.com/news/economics-manufacture-renewables-to-build-energy-security-1.15847

Miller, D. T. (2017). *The China Pakistan Economic Corridor: Indicator of Chinese Strategic Energy Goals and a Challenge to the Open Procurement Status Quo.* Washington D.C: Jackson School of International Studies.

Mirza, F. M., & Kanwal, A. (2017). Energy Consumption, Carbon Emissions and Economic Growth in Pakistan: Dynamic Causality Analysis. *Renewable and Sustainable Energy Reviews, 72*(1), 1233-1240.

O'Neill, D. (2014). Playing Risk: Chinese Foreign Direct Investment in Cambodia. Contemporary Southeast Asia, 36(2), 173-205.

Osano, H. M., & Koine, P. W. (2016). Role of Foreign Direct Investment on Technology Transfer and Economic Growth in Kenya: A Case of the Energy Sector. *Journal of Innovation and Entrepreneurship, 5*(31), 1-25.

Perez, T. (1998). *Multinational Enterprises and Technological Spillovers.* Netherlands: Harwood Academic Publishers.

Petras, J. (2012). China: Rise, Fall and Re-Emergence as a Global Power. *Global Research.* Retrieved from https://www.globalresearch.ca/china-rise-fall-and-re-emergence-as-a-global-power-2/29644

Rizvi, J. (2019, April 17). Pakistan's GDP Growth to Hover Around 5 percent in 2019: GECS. *The News.* Retrieved from https://www.thenews.com.pk/print/458836-pakistan-s-gdp-growth-to-hover-around-5-percent-in-2019-gecs

Roffe, P., & Tesfachew, T. (2014). Revisiting the Technology Transfer Debate: Lessons for the New WTO Working Group. *International Centre for Trade and Sustainable Development:.* Retrieved from https://www.researchgate.net/publication/265080174_Revisiting_the_Technology_Transfer_Debate_Lessons_for_the_New_WTO_Working_Group

Sampath, P. G., & Roffe, P. (2012). *Unpacking the International Technology Transfer Debate: Fifty Years and Beyond.* Geneva: International Centre for Trade and Sustainable Development .

Series, U. (2001). *Transfer of Technology.* Geneva: United Nations.

Tan, X., Zhao, Y., Polycarp, C., & Bai, J. (2013). *Chinese Overseas Investments in the Wind and Solar Industries: Trends and Drivers.* Washington D.C.: World resources Institute.

The Express Tribune, E. (2018). China-Pakistan Technology Transfer Centre Established at NUST. *Express Tribune.* Retrieved from https://tribune.com.pk/story/1866455/1-china-pakistan-technology-transfer-centre-established-nust/

The News (2017, November 21). New Phase of CPEC to Ensure Technology Transfer to Pakistan: Ahsan. *The News.* Retrieved from https://www.thenews.com.pk/latest/247106-new-phase-of-cpec-to-ensure-technology-transfer-to-pakistan-ahsan

Timperley, J. (2018). China Leading on World's Clean Energy Investment, Says Report. *Carbon Brief.* Retrieved from https://www.carbonbrief.org/china-leading-worlds-clean-energy-investment-says-report

Urban, F. (2018). China's Rise: Challenging the North-South Technology Transfer Paradigm for Climate Change Mitigation and Low Carbon Energy. *Energy Policy, 113*(1), 320-330.

Vishwasrao, S. (1997). North-South technology transfer through licensing. *The International Trade Journal, 11*(4), 485-513.

World Bank (2019). The World Bank In China. *World Bank.* Retrieved from https://www.worldbank.org/en/country/china/overview

Yanning, C. (2018). Comparing North-South Technology Transfer and South-South Technology Transfer: The Technology Transfer Impact of Ethiopian Wind Farms. *Energy Policy, 116* (C), 1-9.

Yusuf, S. (2013). *Can Chinese FDI Accelerate Pakistan's Growth?* Washington D.C: International growth Centre.

Book Review: UN Peacekeeping Operations in Somalia, 1992-1995: The Pakistani Perspective by *Tughral Yamin*

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Farhan Hanif Siddiqui[1]

Despite the fact that Pakistan is one of the longest serving and largest contributors to UN peacekeeping operations with more than 6000 military and police officers on active duty, academic and policy works on Pakistan's peacekeeping operations are relatively scarce. Dr. Tughral Yamin's valuable and novel undertaking on the UN's peacekeeping mission in Somalia and Pakistan's contribution fills the much needed literature gap on the subject. Laden with primary sources including diary collections of the 7 Frontier Force (FF) Regiment —– the first battalion in the world —– to land in Mogadishu, personal interviews with Army personnel involved in operations and Pakistani journalists who covered Somalia including also parliamentary debates, Dr. Yamin provides a holistic account of the motivations that inspired Pakistan to become part of a major UN peacekeeping exercise as well as organisational difficulties in carrying out its functions and tasks.

Not only Pakistan but the author takes account also of American and UN motivations in Somalia as well as delineating causes that led to the operation's eventual failure. In doing so, the book raises and answers the following questions: Why did the UN and the US intervene in Somalia? Why did Pakistan become a part of UN peacekeeping operations? What were the major organizational bottlenecks and gaps that resulted in the peacekeeping operations' failure? How did Pakistan contribute to UN peacekeeping operations and what were its relative successes? The book also provides a detail assessment of two key events that dotted the Somalian peacekeeping venture: the June 5th 1993 incident resulting in the deaths of 24 Pakistani peacekeepers and the October 3rd 1993 Black Hawk Down incident where 18 American soldiers were killed including the harrowing and graphic incident of the body of an American soldier dragged on the streets of Mogadishu.

The author rightly notes that Somalia presented an opportunity to both the United Nations and United States to reinvent themselves in a transitioning international order marked by the end of the Cold War. For the United Nations founded on the principle of preventing managing inter-state wars and conflicts, Somalia presented a challenge and opportunity to realign its major function, that is, peaceful settlement of disputes at the intra-state level. The then United Nations Secretary General's Agenda of Peace enunciated in 1992 reiterated that UN should now direct attention at civil wars. The 1990s and the implosion of not only Somalia but also former Yugoslavia and Rwanda in 1994 presented novel challenges to the UN's traditional role of responding to inter-state wars.

[1] *Dr Farhan Hanif Siddiqui* is an Associate Professor at the School of Politics and International Relations at the Quaid-e-Azam University, Islamabad.
E-mail: fhsiddiqi@qau.edu.pk

As far as the United States is concerned, the author brushes aside the notion that oil and uranium deposits were the reason for American intervention. Instead, American intervention could well be explained in enhancing their political influence in the region as well as the urgency of laying the basis of a novel interventionism in a now Communism-free world. For the United States, domestic factors were also at play including the security establishment facing budget cuts, which perhaps explain the rather pompous American amphibian landing by US Marines in December 1992 (p. 75). Pakistan's contribution to Somalia was driven by a multitude of factors shaped by American policies after the Soviet withdrawal from Afghanistan. As the 1990s dawned, Pakistan now faced sanctions to its nuclear program under the Pressler Amendment as well as accusations of supporting terrorism and terrorist actors in the region. In an interesting depiction, the author reiterates how the Pressler Amendment almost compromised a ration supply to the Pakistani peacekeepers as US Marines refused to allow offloading of the cargo; a problematic situation that was resolved successfully later (p. 82). For Pakistan, participation in the peacekeeping mission provided an opportunity to come out of its relative isolation and project its image as a responsible member of the international community. In fact, when the then COAS, General Abdul Waheed visited the Pakistani contingent in Mogadishu in September 1993, he asserted that "it was because of them [Pakistani peacekeepers] that Pakistan stood a chance of winning the diplomatic battle to retrieve the F-16s that the US had refused to release after the application of the Pressler Amendment" (p. 120).

Both General Abdul Waheed and his predecessor, General Asif Nawaz professed a more robust engagement with the United States as opposed to General Mirza Aslam Beg, who opposed Pakistan's participation in the Gulf War to liberate Kuwait. In times of political instability and civil-military discordance, "the military solely made the decision regarding sending troops to Somalia" (p. 12). In making the decision, Pakistan was not completely oblivious or alien to developments in Somalia but in fact, Pakistan Army helped build Somali armed forces in the 1970s and Somali warlords "accepted peacekeepers from Pakistan because it had supported them in their war in Ogaden in the 1980s" (p. 66).

The author notes that Pakistani peacekeepers restored food supplies to the local population winning their hearts and minds with the streets of Mogadishu soon echoing with slogans of *Pakistani-Somali Walal-Walal* (Pakistanis and Somalis are brothers) (p. 72). This initial bonhomie between the Pakistani peacekeepers and locals soon gave way to the June 5th incident where 24 Pakistani soldiers were killed, 57 injured and six went missing, out of which one died in captivity and five were released later. The author provides intimate details as well as major findings of the Commission of Inquiry established by the UN and blames the incident, at a generic level, on the Special Representative of the United Nations Secretary General (SRSG), US Admiral Jonathan Howe who believed in the use of force in order to settle the tribal feud between the challenger General Farah Aidid and the incumbent Somalian President, Ali Mahdi.

More specifically, the author reiterates that the onus of the tragedy lies squarely on UNOSOM which failed to apprise the Pakistani contingent that General Farah Aidid's Somali National Alliance had not provided express consent to a routine Authorised Weapons Storage Site (AWSS) in Mogadishu (p. 90). According to the author, 'Americans did not share operational intelligence with other nations leading to the June 5th incident' (p. 121). As the Pakistani contingent moved in and locals

surrounded the Pakistani peacekeepers, a chain of events resulted in the death of a civilian and the siege of Pakistani troops. Most unfortunately, the rather delayed mobilization of Italian troops increased the Pakistani death toll. While providing critical insights into the botched operation, the author sensitizes the reader to tribal customs which were less well understood by the peacekeepers. He asserts: "Had the Pakistanis known that the Somalis were averse to being disarmed they would have been more careful and wary of the consequences of such an exercise" (p. 98).

The June 5th incident invigorated the peacekeeping mission leading to General Farah Aidid now being identified as all that was wrong with Somalia, however, more casualties were to follow. A rather ill-planned attack on General Farah Aidid's compound where presumably tribal elites had gathered to broker a deal with the United Nations resulting in deaths ranging from 20, according to UNOSOM and 54 dead and 161 injured on the part of the ICRC, led to the Black Hawk Down incident where American soldiers were ambushed with 18 killed and two helicopters brought down by Somali insurgents. Subject of a Hollywood movie by the same name, *Black Hawk Down*, the author takes serious notice of the underestimation of the rescue operation undertaken by Pakistani troops which was not made part of the movie nor does it occupy any compelling mentioning in the operation's narrative. In fact, when "General Montgomery asked the Pakistani Brigade for tank support for the rescue operation, the response was immediate and positive and the four operationally fit M48 tanks were dispatched for the rescue operation" (p. 136).

Not only American troops but the Pakistani contingent also rescued the Indian, Zimbabwean and Bangladeshi troops in the course of 1993 and 1994 as well as providing escort to the World Food Program's food convoys. In all, Dr. Yamin reiterates that the failure of UN's peacekeeping mission in Somalia was "due to the lack of coordination and understanding at the planning and execution stages" (p. 183). The book is an excellent undertaking in not only providing a first class account of the exigencies and tribulations that drove the peacekeeping mission in Somalia from a Pakistani perspective but is also valuable in shedding light on why the peacekeeping mission failed as a consequence of organizational handicaps. For all those interested in peacekeeping missions, the United Nations, collective security and peaceful settlement of disputes as well as socio-economic and political problems inflicting failing states, this is an excellent text worthy of read.

Red Birds by *Muhammad Hanif*

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Azka Durrani[1]

Muhammad Haneef, applied his intellectual wit, pugnacity and dead pan humor to pen down a much needed war novel set in the 21st century. His skills of journalism and fiction writing interlaces with his history of serving as a pilot in Pakistan Air force. This history of author is reflected in the character of Ellie, a US pilot who crashes his plane in a desert of a war torn country, a no-man's land (a fictional *Nowhere-istan*). According to Haneef himself, he is caught between his two roles as a fiction author and a political analyst. He equips 'Red Birds' with his insidious power of a satirist and combines it with his laconic worldview and political insight. He uses fictional characters but non-fiction global ideologies, wars and countries (like Afghanistan, United States) and institutions (like United Nations, Red Crescent, USAID) to present a vivid grim reality of contemporary war to the reader.

'Red Birds' laments the horrid conditions of conflict in a region which is not identified by the author himself but implicitly refers to US interventions in Middle East and/or Afghanistan, a predominantly war torn regions. Like previously written war novels he opens up with the absurdity of a condition of a man tied to Sisyphean tasks that bring about order and disorder at the same time. Enmeshed in a paradoxical situation, the soldier and premise of the duties he performs, becomes the identity of his country (vice versa). These 'duties' budded from nationalism becomes a necessary cog in the system of creation of wars multiplying itself into production of chaos, destruction and a lost sense of self. The global battleground becomes a place where there are no winners or losers.

The book is divided into three sections. The first section 'In the desert' introduces the reader to all its narrators starting with a pilot lost in a desert looking for his crashed plane. Through his narrative, the author gives reader an introduction of US foreign policy and military adventures in multiple conflicts. The second section, 'In the camp', centers its focus on a common family and their individual lives in post-conflict arena, revolving around issues of internally displaced persons, missing persons and refugees. The last section 'To the hangar', is a rapid disclosing of events, near-mythical and imaginative in its depiction, it describes how the psychologies of people in war-torn regions react to their plight in the form of an attack on US soldiers (and is portrayed usually in the western media as terrorist attack). Previously written war novels revolves around the historical realities of total wars, however this book takes a deeper look into the additional element of humanitarianism and its sensitive rudiments corresponding to victims of war. The novel focuses on a triad of narratives; a US pilot Ellie (representing the common American caught in its country's foreign policy adventures). Momo, a young Muslim boy caught in the post-war situation, having big entrepreneurial dreams of wealth whilst stuck in a post-conflict economy, his identity

[1] *Azka Durrani* is pursuing her Masters in Peace and Conflict Studies at the Centre for International Peace & Stability (CIPS), National University of Sciences and Technology (NUST).
E-mail: azkadurrani.pcs17@cips.nust.edu.pk

also mirrors that of an average capitalism-loving American citizen. Though he is a character representing identity of south, he is also a product of American lead war and the collective globalization effort. The dog, referred to as mutt represents the wise old critic, a philosopher, serving as the ethical compass of the story.

The story opens with Ellie, an officer trained, aware of tribal traditions and prepared not only for combat but also his additional cultural sensitivity course prepares him to interact with people of foreign cultures despite that he still possesses an orientalist and racist lens (symbolically this representing the west). He signifies a soldier prepared for defense and diplomacy. Lost in the desert he comes across the characters of Momo and the dog referred to as mutt. Their family is the holistic representation of common citizens affected by American war in their region. Ellie takes harbor in a place which is a village turned refugee camp. The story also has a mysterious abandoned US military hangar repetitively mentioned in the background and in the ending climax of the book. The abandoned hangar signifies the US military's intentions and delayed strategies of exiting the region of entrenched conflict (can be in reference to Afghanistan). The narrator introduces the reader to the absurd foreign policies resulting in war mongering of the west. The national interests of the hegemon supersedes all other national interests. When the author writes "an entire United Nations of the teary-eyed" (p. 25), he satirizes the neo-liberal institutes created for the purposes of conflict prevention. Haneef censoriously defines modern war as: "War has been condensed to carpet bombing followed by dry rations and crafts classes for the refugees". Through the character of Ellie, the author is portraying the failing and horrific securitization efforts of US military. In a world where today human rights and human security is seen as a top priority of international security, a pilot is also not cared for by the central command. Thoughts of Ellie reflective of his existentialist crisis as a US soldier are written comically by the author. Criticizing the war budgeting, Ellie surmises: "They give you a 65 million dollars machine to fly and […] expect you to survive on four energy biscuits and an organic smoothie" (p. 3).

Additional fictional narratives of a USAID researcher and psychologist are also given space who is studying "the minds of teenage Muslim boys" (pg.44) for her PhD thesis, her role is empathetic to the plight of war torn countries but according to the author, that is not the case. She benefits from the conditions of post-bombings and PTSD, her research thrives in such fields, "It was simple, they bombed us and then sent us well-educated people to look into our mental health needs" (p. 44). The author narrates while referring to missing persons in post-conflict societies "[…] they have one department to pick them up and another department to make us forget them" (p. 67). From irreverence towards a legit conduct of war to insensitivity towards inhabitants of the region in conflict zones, some military campaigns in the history exemplified itself as a miscreant force exploiting the attacked regions. But with the rise of human rights post-WWII, a more defined set of jus ad bellum and jus in bello injunctions for the ethics of war were laid. The author through Ellie's and Momo's stream of conscious tries to show how war has become intrinsic to some identities and the damage caused is irreparable. The west in its mission for civilizing has turned to liberating the regions from terrorizing militias, all in the name of global peace. Historically the pretense for intervention used to be scientific racism; today it has been turned into a global security issue. The characters in the book mocks these strategies

veiled under humanitarianism, for making the war machinery persist and sustain. The pilot Ellie while stranded in a desert for more than eight days following a failed mission to bomb an area, projects this thoughts: "In the beginning of my career there was an argument about central command for the country or country for a central command" (p. 9).

The author explores and explains the persistent dilemmas of post-war economic and social conditions, satirizing a complex web of interdependent entities of war. For example a soldier trained to aim, fight and kill, are also getting trained in cultural sensitivity courses. They cannot care less of all the etiquettal niceties; they are not enrolled in a diplomatic peace corps. Through the character of Ellie, it can be inferred, that how it is futile to expect humanitarianism from a soldier sent in to war zone fully armed and veiling absolute powers over the unarmed enemy.

Satirizing the desensitization of drone operators, Haneef writes: "[…] they are going to retire me and replace me with a geek in Houston who remote controls drones, someone who can fight a one-handed war while dipping his fries in barbeque sauce" (p. 5). In military ethics, the dehumanization aspect of a soldier only virtually present in a battlefield (autonomous artificial intelligence vs. human-in-loop policy) has been contested by international law experts and still remains a deadlock debate in IR. The author delivers to his reader the dilemma of unmanned aerial vehicles which are replacing the aerial bombing raids by drone strikes. While the American military analysts applauds drones as the best targeting mechanism when it comes to tackling asymmetric threats like Taliban, Haneef disagrees and writes: "[…] though you can zoom in to see what's cooking in their pots, you can do the closest of close ups but you still can't tell for sure if they are discussing a cut of lamb or planning to bring down the western civilization" (p. 93). The writer does not only point out to the obvious flaws in the revolution in military affairs (RMA) by introducing drones to combat radical militants hidden in remote geographical regions but also criticizes how drone strikes just like conventional military attacks is only a tool to kill.

The psyche of the people affected by prolonged conflict becomes deteriorated to the extent that in extreme conditions, ironically, they hope for war for it will bring in more aid through international donors, opportunities for some sort of employment for the local people in these donor agencies offices and food and free health care. Ellie, the pilot while observing the refugee camp observes: "They eat USAID grains, get US aid injections. These children think there was nothing before it and there will be nothing beyond its camp" (p. 110). They have a limited sense of their past and they load their future on interventionists forces of power, in this case the US military and USAID. Slow eradication of their history through prolonged war can make the habitants of the region forget their true identity. "If you are cooperating with the people who destroy your houses, it can have tragic results" (p. 29).

When the author talks about Momo's 'I heart NY' cap or his reading of 'Forbes 500' or his wish to ride the jeep Cherokee, the author implicitly refers to the Macdonaldization of post-war identities. The repercussions of that affect can be mangled and distorted. The individual can either be pushed towards extremist fundamentalism or become permanently confused and torn between his native culture and foreign values. He becomes a living corpse unable to move forward or look back. The characters of the two brothers 'Bro Ali and Momo' reflects just that. In this age's asymmetrical theatre of war, failing exiting military strategies and a failure to uproot radicalization and terrorism by mass bombing Middle Eastern countries, the author is

trying to state the obvious: the military interventions for human rights or 'war on terrorism' were only labels created to amass popular support for enterprising war. The author explains a Kafkaesque conundrum of political economy of war in the following words: "[…] war is a business, no? Or is there more business after war?" (p. 152). On similar lines he talks of security the same way when he writes "global security is nothing but social engineering through job creation" (p. 231). He tends to re-define 21st century military institute in the following words: "Things have changed now, PTSD counselling, generation five drugs." (p. 256).

The author in the third section of the book gives voice of narrative to female characters in the post conflict arena. A psychologically disturbed mother, whose son has went missing and a researcher, who is trying to understand and explore the psychological mind set of her other son. These characters come alive during war and specifically in post war environment. Just as in human securitization issues, child soldiers and small arms proliferation holds a central subject in security studies, women involved in war zones sets another frame work for understanding conflict and its elements. The characters of Lady Flower body and Mother Dear abruptly takes the center stage in the novel. It appears that the author decided to give them a center stage in the story-line when all men in the conflict zone have been exhausted or failed in rescuing Bro Ali, the missing person and was later found to be abducted by the US forces. This narrative turn in the novel is also reflective of trends in scholarly studies of International Relations. Theories like liberalism, realism, constructivism gives a set of explanation for state behavior and reasons for war. In past few decades Feminism has also found roots in IR scholarship. As a war novel, expanding on contemporary conflicts and post-conflict complications, inclusion of a female narrative in the final parts of the book is mark of ingenuity on part of the author.

The author has used metaphors of 'red birds', 'red dust', 'ghosts' and 'mirages' in the desert in order to refer to some deep held problems of a war torn society. Red birds first appear to be given a logical explanation by the author. He writes that the common canaries consumed water having quantity of low-strength uranium, which has turned their color red. As the story proceeds the reader can infer his own interpretations as the metaphor gets mentioned throughout the text in different contexts. It symbolizes blood, mass-atrocities, violence, missing persons, dead persons etc. The novel is not just a narrative of the oppressed and violated but a heavy critique of war, post-conflict development and reconstruction efforts undertaken by agencies of UN. It is satirizing state and non-state actors alike. It refers to the corruption of UN aid departments, mismanagement of post-conflict areas by international agencies and mocks the so called 'human security' as envisioned by neoliberal international security paradigm. The comical representation of the story is not for the reader to merely get entertained from, but to readdress the whole institute of war and the political economies that finance the entire infrastructure, within which the global man finds himself deeply intertwined.

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