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Contents

Editorial

The editorial board is highly delighted to bring out the 67th issue of Army Journal to the esteemed readers covering the edifying as well as pertinent issues of multidimensional, stimulating and thought provoking delineations. We are upbeat that the thought-provoking articles of the current issue would positively gratify the pursuit of knowledge of officers as well as enhance their professional excellence. The board had been arduously dedicated to elevate the scholastic excellence of the issue ensuring ingenuity, diversity, creativity and novelty in each of the write ups. We are sanguine that this journal would reflect the intellectual domain of our army.

We would like to thank all the prolific authors for providing outstanding research articles on a broad range of exciting topics covering parenting in military environment amid the rise of cyber aggression, requirement of soft skill training for the junior leaders, role of Bangladesh Army in earthquake/landslide management in CHT, Operation Searchlight in the light of the defense literature of Bangladesh, applications of artificial intelligence, transnational crime and challenge for Bangladesh, big data for Bangladesh Army, critical thinking as a decision making tool and application of the theory of levels of war in fighting the asymmetric warfare in Bangladesh. We are confident that our distinguished readers will gain much from the insights highlighted by our esteemed authors.

The editorial board gratefully acknowledges the prudent and keen observance of the Chief Patron whose professional acumen and constant guidance have made the qualitative enrichment of the journal. Finally, we would feel amply rewarded if the readers find this issue educative and satisfying. We are optimistic that the future issues will foster newer ideas with more vibrant topics. We assure our relentless quest in attaining the best with the continued and concerted support of all.

PARENTING IN MILITARY ENVIRONMENT ON THE RISE OF CYBER AGGRESSION: DOMESTIC AND ORGANIZATIONAL APPROACHES

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Abstract

In the critical framework of digital transformation, the internet ecosystem is playing a dual role in fostering creativity and harnessing exploitation. Children, being one-third of the total internet consumers, are struggling to nurture their positive potentials against the dangers of cyber aggression. The study unveils the critical scenarios of the military parenting that influences the online behaviour of the children and suggests the parental and organizational role to safeguard them from cyber aggression. The children grown in the military environment inhabits an isolated sentiment that inculcates distinct individualities in them. Besides, parents' dedication to professional commitments, traditional military social custom, isolated grooming environment, and frequent shift from station to station often hinder their harmonious development. This isolated and intricate image of the military children turns them into a sophisticated target of cyber offenders and develops a big risk curve for parents. To safeguard the children, parents must first assess online self behaviour and methodologically implement both motivational and technical approaches. In a broader framework, Bangladesh Army must adopt a rational strategy to strengthen the cyber sector against the aggression. This institution may also generate the potential to build a social bonding that can reach closer to the children for nourishing their emotional hunger and keeping them safe from the dangers of the cyber world.

Keywords: Cyber aggression, parenting, organizational role.

Introduction

The domain of cyber offers connectivity beyond borders and acts as the hub of entertainment and information exchange. Besides its constructive notes, it also cultivates the asymmetric nature of inherent vulnerabilities. In such a complicated realm, even adults struggle to balance between its 'Good and Evil' margins. Children in the cyber world face harder challenges because of their lower maturity and curiosity about this unseen world. The potentials of the cyber world to promote children's development opportunities are undeniable. But it also exploits digital addiction, sexual exploitation, violence, radicalization, and mistreatment in the form of 'Cyber Aggression'. Such an unprecedented nature of cyber world causes a dilemma for parents in striking balance between its constructive and disruptive potentials. To safeguard the children from the fast rise of cyber aggression, 'Parenting' is one of the most challenging issues of the current technology dominant world.

In military environment, the military parents remain mostly preoccupied with their professional commitments. Habitually, they groom up their children with discipline, mannerism, tradition, and acclimatize them with the isolated cantonment life. These children nurture their

childhood as a part of the military culture within the secured professional horizons of parents. Besides, frequent shifts to different stations, change of peers, and altering schools at regular intervals develop a latent psychological change in them. Eventually, the continuous environmental change raises them unsociable and they become a passive member in the social framework. It also restricts them from building an accountable social bonding with relatives. Research shows that the danger of cyber aggression being more prone to children, especially isolated personalities, is the most critical concern for the parents[1]. These obstacles in natural pursuance of studies also hamper their aspiration for career development. Even because of professional obligations for the organization, parents lose their focus to nurture their children with a specific aim. Eventually, the overall grooming of the children in the military family become more inclined to the seductive call of the cyber world.

Therefore, on the rise of cyber aggression, children grown in the military ambience are more exposed to its detrimental effects. This paper first unveils the parenting perception in the military environment. Later, assessing the rise of cyber aggression, the article figures out how the children, especially in the military family, are susceptible to become soft victims of cyber world. Finally, the paper proposes rational approaches for parents and unified strategies for Bangladesh Army to safeguard children from the vertical escalation of cyber aggression.

PARENTING IN MILITARY ENVIRONMENT

Parenting Styles

Parenting style has two dimensions that represent two orthogonal axes: demandingness axis and responsiveness axis. Again, the interface between these two axes signifies four parenting styles: authoritarian, authoritative, neglecting, and permissive[2]. The authoritarian parenting imposes strict rules for the children with very little care, leaving no choice for them. The authoritative parenting set clear guidelines for the kids to balance between imposed boundaries and independence. The neglecting or uninvolved parenting mostly remain disengaged from their kids and continue their parenting with very little emotional attachment. Finally, permissive parenting nurtures more affection to their children but exhibits excessive leniency to enforce desirable rules.

Parenting in the Military Environment

The militaristic culture has a unique feature that socializes both military and family members through a 'military way of life'. The militarism also encircles his/her private sphere influencing spouse, children, parents, and other associates of personal life. Unlike a civil official who can distinctively separate between professional and personal life, 'military way of life' is an environment where the borderline is remarkably thin. The military profession even upholds the formal involvement of family members in most of the festivals or social events. In almost all

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[1] Doss, Ashley N., Military Lifestyle's Impact on Children's Adjustment, Stephen F. Austin State University SFA Scholar Works, August 2017

[2] Tur-Porcar, Ana, Parenting styles and Internet use, Psychology & Marketing, Wiley, November 2017, DOI: 10.1002/mar.21040

occasions, military member practices rank driven interactions with other military families. Thus, the traditional stream of military life permeates quickly into the family and social life. This permeation indirectly internalizes a rank obsessed authoritarian lifestyle in the community and instill social hierarchy into the family institutions. The children in the military family grow up nurturing these yardsticks, which exponentially stimulate them to adopt a 'separate but similar-minded' military culture.

Challenges of Parenting in the Military Environment

The motive of '*service before self*' keeps the military personnel committed towards their professional activities. Assignments in the United Nations (UN) Mission, exercises, training, and various prompt deployment keep military professionals away from their family at a regular interval. Considering the duration of two UN missions, exercises, and training at different tires round the year, a military person remains roughly three and a half years out of home in his first ten years of service. The inclusion of busy tenure at staff courses and other individual assignments will further increase the 'family distance' duration. Mathematically every military child of 10 years old age remains out of the affection of father/mother for almost four years. This lack of parental association makes an imbalance of psychological counterweight between affectional needs and parenting boundaries for both parents and children.

In consequence, military parents cannot follow any specific principles of parenting strategy. Instead, in situational perspective, military parenting tilts within authoritarian, authoritative, and permissive models of parenting. As a result, the nature of military professionals' obligation towards service does not allow the natural flow of parenting, like the civilian officials.

Influence of Military Environment in Nurturing Children

Effect on Emotional Domain The uncertain length and form of the father's military assignments, pour the children with anxiety and fear of the unknown[3]. This regular absence too often compels the military children to suppress their emotional hunger for the association of their father/mother. Gradually, they adjust to this parental absence during important family programs, birthday program, new year celebration, or even during religious festivals. Prolonged separation with father/mother brings an imbalance in their need for parental affection. This psychological distress generated from the military environment hinders the emotional development of children.

Effect on Educational Pursuance The frequent posting of military personnel from station to station regularly disconnect the children from school, friend circle, and community. This continual shift not only upsets their educational aim but also transports stressful acclimatization to an unfamiliar peer environment. Moreover, the dedication towards the service of military parents mostly prioritizes official commitments over the career persuasion of the children. As a

[3] Schuh, Amanda L., Building Resilience in Military Families: Development and Evaluation of a Military Child Intervention, Dissertation Paper of the University of Michigan, 2016

result, a military parent struggles to mentor the children with time and attention that often disorder the educational pursuance of the children.

Effect on Social Domain Mostly, military parents emphasize instilling discipline with a preset format of lifestyle to the children. In reality, when the children inherit such traits, they grow a military child image within peers. They grow up learning to differentiate peers on the rank of the parents during play, gossip, and other events. Again, research work found that children of the military family grow an individualistic attitude and struggle to blend in with the public[4]. As a result, they nurture a passive approach in the social environment and generate a sense of social distance from peers and relatives. Thus, military children lack the harmonious social development attributes.

Effect on Moral Domain Again, in the customary framework of military tradition, only spouses are allowed to attend specific official and social programs. Besides, ladies' club regulation allows only lady wives to attend periodical enrichment activities. In the absence of parents, military children usually remain alone at home and naturally get engaged with digital devices. Sometimes, to avoid their demand of parents' association and to adjust with official commitments, parents themselves offer their children with smartphones. The time they spend alone browsing the internet at home severely exposes them to the dangers of the online world. This approach of grooming builds an introvert child personality. By nature, the reclusive characters are priority targets for online terrorist recruiters and more prone to the other evil sides of the cyber domain.

Relative Impact of Military Parenting on Triggering Cyber Aggression

The analysis illustrates that the military parenting pattern develops an isolated image of the children in society. Besides, the imbalanced emotional, social, and moral development of the military children influences them to interact via digital platforms than facial interaction. Gradually, the children grow favoritism for online friends than family members, relatives, neighbours, and prefer to stay away from social interactions. In most cases, military parents are neither aware of the cognitive and social deficiency of the children, nor possess the technical knowledge on the cyber domain to guide them. They remain ignorant of the aggressive statistics of child cybercrime increasing in the world. This state further infuses scopes for the children of the military community to remain unobserved in the cyber domain. As an aftermath, they grow a sense of individualism, seek privacy, and hunt for a platform to interact with friends and strangers who give them attention. Gradually they become addicted to the online platform where they can exchange views without restriction. In such a real-life scenario, careful parents need to understand the gamut of cyber aggression in comprehending the likely vulnerabilities children may encounter. Every parent must recognize that the children falling under statistics of the cyber victim today could be his own kids whose parents were ignorant to protect their children from the online dangers.

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[4] ibid

AN ASSESSMENT OF THE RISE OF CYBER AGGRESSION ON CHILDREN

Statistics of Cyber Aggression in the World Perspective

In a survey conducted in 60 countries of the world, Japan is ranked as the most cyber-secure country. In Japan, only 1.3 mobiles and 8.3 computers out of 100 are infected with malware having a cyberattack preparedness index of 0.786 out of 1. In Bangladesh, every 35.91 mobile device and 19.7 computers out of 100 are affected by the software designed to gain unauthorized access to the device. The following chart shows the statistics of 10 countries adopting the worst cybersecurity measures in the world:

Table 1:Worst Cybersecurity Rankings of the World

Cyber Security Rank (Worst to Best)	Country	Score (Worst to best)	% of Mobiles Infected with Malware	% of Computers Infected with Malware	Best Prepared for Cyberattacks (Rated out of 1)
1	Algeria	55.75	22.88	32.41	0.432
2	Indonesia	54.89	25.02	24.7	0.424
3	Vietnam	52.44	9.62	21.5	0.245
4	Tanzania	51.00	28.03	14.7	0.317
5	Uzbekistan	50.50	10.35	21.3	0.277
6	**Bangladesh**	**47.21**	**35.91**	**19.7**	**0.524**
7	Pakistan	47.10	25.08	14.8	0.447
8	Belarus	45.09	9.33	31.1	0.592
9	Iran	43.29	28.07	12.7	0.494
10	Ukraine	42.58	10.85	28.7	0.501

Ref: Rebecca Moody, Data Journalist, February 6, 2019, https://www.comparitech.com/blog/vpn-privacy/cybersecurity-by-country/Accessed on 18 January 2020

Statistics of Cyber Aggression in Bangladesh Perspective

The cyber aggression in Bangladesh with an inferior protection system is visible from different statistics. The statistics show that Bangladesh is the 6th least prepared countries against cyber-attack in the world. Bangladesh has the highest rate of mobile malware infection and ransomware Trojan infection in the world. In the global cybersecurity indicator measured by the UK-based National Cyber Security Index (NCSI), Bangladesh is the 86th in the world ranking. Again, in the ICT development index, Bangladesh is the 147th in the world. The statistical analysis shows that Bangladeshi internet users are very prone to cyber vulnerabilities. The following table will give a glimpse on the status of Cyber aggression and level of preparation against cybercrime in Bangladesh:

Table 2: Bangladesh in the World Ranking of Cybersecurity

Ranking Event	World Ranking	% of Attacked Users	Evaluation Time	Ranking Institute
Users faced the highest risk of local infection	11th	44.11	Q2 2019	Secure list
Users faced the highest risk of online infection	6th	16.82	Q2 2019	Secure list
Users attacked by Ransomware Trojans	1st	8.81	Q2 2019	Secure list
Users attacked by mobile malware infections	1st	35.91%	Q1 2019	Comparitech
	2nd	28.10	Q2 2019	Secure list
National Cyber Security Index	86th	28.57	Q1 2019	NCSI
Global Cyber Security Index	78th	0.525 Score	Q4 2018	ITU
	Region 15th			
ICT Development Index	147th	25%	Q1 2019	NCSI
Networked Readiness Index	112th	47%	Q1 2019	NCSI
Worst Cyber Security	6th		Q1 2019	Comparitech

Source: https://securelist.com/it-threat-evolution-q2-2019 statistics/ 92053/and www. comparitech. com /blog/vpn-privacy/cybersecurity-by-country/Accessed on 18 January 2020

Again, as per the report extracted from Bangladesh Computer Emergency Response Team (CERT), Bangladeshi internet users are extremely exposed to cyber vulnerabilities[5].The study of UNICEF unveils that children of Bangladesh are significantly risking their online behaviour. In Bangladesh, within the age group of 10-17 years, every single child out of four starts accessing the internet before even turning 11 years. The following study of UNICEF depicts the danger children are chasing from Cyber threat in Bangladesh.

[5] Bangladesh Computer Emergency Response Team Annual Report 2018, Published on June 2019

Table 3: Cyber Threat Statistics Against Children of Bangladesh

The Pattern of Cyber Threats against Children of Bangladesh	Children Age Group	Percentage of Victim Children of Bangladesh
Victim of violence, cyberbullying, sexual exploitation, abuse, and digital harassment	10-17 Years	32% of the child internet users
Facing religious provocation	12-17 Years	10% of the child internet users
Addicted to online Chatting	10-17 Years	33% of the child internet users
Addicted to watching Videos	10-17 Years	30% of the child internet users
Befriending unknown people online and consequently meeting in person	10-17 Years	70% boys and 44% girl
Uses the bedroom as the primary place to use internet	10-17 Years	63% of the child internet users

Source: https://www.dhakatribune.com/bangladesh/dhaka/2019/02/05/unicef-prevent-online-bullying-harassment-of-children-in-bangladesh, Accessed on 19 January 2020.

Statistical Analysis of Cyber Aggression on Children

Website Content Statistics The Internet Watch Foundation (IWF) discovered 105,000 new websites containing child sexual abuse material just in one year that is a 32% rise from the previous year. Again, INHOPE's Internet Hotlines reported that the number of illicit images and videos increased by 83% from 2016 to 2018. Most shockingly, the depiction of pre-pubescent children between 3 to 13 years of age in CSEA (Child Sexual Exploitation and Abuse) images and videos raised from 56% in 2016 to 79% in 2017 to 89% in 2018.

Children Involvement Statistics According to the Digital Intelligence Quotient (DQ) Impact Report of 2017 on 29 countries in the world, 56% between 8-12 years old children are already exposed to at least one cyber-risk[6]. Out of all adolescent internet users, 72% uses social media networking, and 47% of them have an unprotected viewable public profile[7]. Besides, 19% of Child apps are collecting private and family information from phone contents[8]. Again, in 82% of online sexual harassment cases against children, sex offenders are collecting data from social networking sites. Alarmingly, every seven out of ten adolescents come across pornographic materials accidentally because of the exposed contents and adware available on the internet[9].

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6 Child Online Safety Report 2019, Broadband Commission for Sustainable Development, October 2019

7 How safe is your Child Online, Office of the Arizona Attorney General, 2018?

8 Livingstone, Sonia et al., Children's data and privacy online Growing up in a digital age, LSE Media and Communication, December 2018

9 UNICEF GLOBAL KIDS ONLINE Comparative report, November 2019

Distressingly, 24% of the online adolescents within the 14-17-year age group gradually become involved in 'illicit sexting.' Amongst them, every single child out of five reportedly posted or sent their illicit, semi-nude, nude photos or videos to online friends or strangers. All those data are factual happening in the world beyond the perception of parents. Every child is like an angel to their parents. Perceiving the involvement of own children in such incidents is though beyond acceptance for parents, but a fact at present.

HOW CHILDREN BECOME VICTIM IN THE CYBER WORLD

Risk Content Analysis

No child is safe from online risk. But the most vulnerable are those who cannot presume how they are carrying, supplying, and reciprocating to the dangers of the online world unnoticed. Researchers characterized the wide-ranging of online risks of the children into three categories: content, contact, and conduct risks[10]. **Content risk** is where a child is exposed to inappropriate material. In **Contact risk,** a child himself takes part in unsafe communication. And **Conduct risk** is where a child behaves in a way that contributes to risky content or contact[11].

How Children Become Victims of Organized Online Offenders

The online offenders victimize children maintaining the following four sequences:

Step-1: Befriending Stage At first instance, professional cyber offender analyzes the browsing patterns, interest, photos, and status updates of the target children. After the online behaviour analysis, the offender develops multiple fake profiles to trap the children, offering a series of attractive features. Finally, the victim falls into the trap and becomes a friend of the preparator. Usually, the offender searches for target children from a higher social background who mostly remain connected online and have a late-night browsing and isolation habit. The preparator also prefers to victimize a child usually looked after by the housemaid with the potential to provide sensitive information.

Step-2: Grooming and Trapping Stage After the victim accepts the friend request, the preparator introduces himself/herself as an ideal listener and iconic model to the victim. The grooming session usually begins with sympathetic chats. Gradually, the groomer manipulates the victim by affirming with feelings and sympathizing with the victim's problems and insecurities. The groomer also stimulates the victim to grow a distance between parents, relatives, and friends. Progressively, the preparator exploits natural sexual curiosities of the victim, introduces sex into conversations, and starts exposing them to soft pornography. Initially, the groomer exchanges soft photos, video contents and gradually collects evidential proofs of illicit messages, images, and videos. Consequently, under the trap of **'Content and Contact Risk', the** groomer threats to use those evidence for commercial use.

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[10] Livingstone, Sonia, Giovanna Mascheroni and Elisabeth Staksrud, 'Developing a Frame work for Researching Children's Online Risks and Opportunities in Europe', EU Kids Online, London, 2015

[11] The Protection of Children Online, Report on Risks Faced by Children Online and Policies to Protect Them, OECD 2012

Step-3: Data Mining Stage In this stage, the preparator gathers data about the victim, victim's friend, parents, parent's professional institutions, and banking information. They extract data from the victim's social networking credentials, chatting history, or directly from online interactions. The organized cybercriminal group prepares the blackmailing plot by analyzing the merit of the collected exploitable contents and the victim's social network. Data mining is more aggressive for the victim who has parents working in sensitive organizations like military, police, and intelligence[12].

Step-4: Converting Children into Contributors The most disgraceful stage is when the groomer converts the children into the contributors. Initially, the children become consumers to pedophilic materials without awareness. The children though protest initially against the sexually explicit materials, but regular provoke of illicit contents and pedophilic materials gradually make the children addicted. The end state of the danger is when groomers turn children into preparators for online crime against other children like their classmates, friends, or schoolmates. Subsequently, an innocent child reaches to the most exposed '**Conduct Risk**' stage, endangering his/her associates.

The Children of Military Environment as a Potential Target Victim

From childhood, children grow up in the military environment, observe their parents talking about wars, handling weapons, planning battle exercise events, and even exchanging sensitive information relating to national security. The environmental influence infuses a pattern of exclusivity in the characteristic of military children. Besides, a busy schedule of parents, peer isolation, distance with relatives, and inexperience to deal with social reality patronize these children for preferring the online world to express their views.

In the online world, a military child seeks emotional attention, remains unobserved, and has the potentials to share sensitive information about military activities. Hence, children grown up in the military environment possess almost all the features that groomers search for within a victim. As a result, they remain one of the most exploitable sophisticated targets of cybercriminals. In consequence, the military children, if not appropriately mentored in the online world, may bring a tragic decline to their personal, societal life and also to the organization. Therefore, following methodical approaches to safeguard the children from the ongoing cyber aggression is one of the fundamental essentials for military parents and for Bangladesh Army.

DOMESTIC APPROACHES TO SAFEGUARD THE CHILDREN

To safeguard the children from the dangers of cyber aggression, a holistic approach combining societal and institutional responses are essential. Especially, protecting the children developed in a military environment of Bangladesh Army demands a diversity of

[12] Marcum, Cathrine D, Higgins, George E., Social Networking as a Criminal Enterprise, 2014, CRC Press, USA

reactions from both parents and organizations in a holistic framework. The focus of the response must start from home, get nurtured in the educational institution, and need enforcement by Bangladesh Army.

Digital Literacy for Mentors and Children Digital literacy for parents, teachers, and children is the foremost step to safeguard children from cyber aggression. Military parents must attain institutionalized digital literacy to monitor, pursue, and provide guidance on the adverse effects of the Cyber world. The training on the digital literacy of the parents must ensure both tactical and technical teaching on cybersecurity. The practice may include protection from loss of privacy, reputational risks, online grooming strategies of the offenders, and reporting system if they encounter something odds online[13].

Parents to Led by Examples Parents must inculcate self-online-behaviour like the digital role model to the kids before imposing any restriction or conveying the motivational approach. Parents must spend time with kids, both offline and online. Parents need to grow habit to browse interesting subjects or subjects related to kids' study together. Parents may remain as online friends and follow the children on social media. The practice of abruptly using digital devices by the parents must not set a controversial question for the kids. Imposing a work-life-screen time balance strategy at home may place the parents as 'personal role models' to their kids, which will significantly aid in developing their emotional domain.

Impose Basic Prevention from Online Dangers Parents should place a **'big screen monitor'** at common spaces in the home viewable to all family members for accessing the internet. Parents must ensure child safety measures in internet browsers like putting Google search filter on 'safe' or use secured kid-friendly browsers like Kiddle, Kid Rex, Kidz Search, etc. Parents should surf the internet together with children to show how to search and extract information without a privacy threat. Parents should also set reasonable time and usage limits as per the age group of the children.

Religious Practice and Grand Parental Environment Practicing, nurturing, and emphasizing spiritual value at the family level can play one of the most effective roles to foster happier family life. Religious teaching to the children can act as a curtain against the evil call of cyber aggression. Besides, patronizing a grandparental environment at home and in the garrison community can bring back the traditional values of the old society. Grandparents can be the best mentors and company for the children to keep them away from cyber offenders. This combination will rebrand the family bonding, infuse respectfulness, and instill ethical values in the family and society.

Technical Management Parents may use the small ingenious device like ‘Circle', which offers 'Internet Browsing Management System'. It is a small device that pairs with the wired

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[13] Islam, Md Ashraful, ‘The Dark Side of Social Media: An Emerging Challenge for the Junior Leaders to Nurture Cognitive Domain’, Bangladesh Army Journal, June 2019.

or wireless home network and capable of controlling internet access by mobile apps of every connected device in the home. 'Circle' uses the 'ARP spoofing' technique that ensures all internet traffic is passing through the controlled device[14]. Again, parents may also ask internet service providers to provide tools to protect children using the internet.

Addressing Risky Online Behavior Parents must understand and monitor the nature of risky online behaviour of children. When a child is frequently posting personal information, placing strangers in the friends list, and becoming secretive about online activities, a parent can assume that the kid is risking him/herself. Besides, the child may be in contact with the groomers when he/she shows anger upon failing to go online at a specific time. The children steadily become late-night obsessive browsers and may receive unknown phone calls or gifts from anonymous persons. Gradually, he/she remains isolated from family and friends. In such a scenario, parents must not overreact. To safeguard children from online exploitation, parents should ask politely whether the stranger pursues his/her personal information, asked about pictures or videos, or did anything uncomfortable to share. Parents must empower children to take responsibility for their online practices by regular motivation and alerting them about the consequences of being a victim. Parents must make children understand the risk of content creating and sharing.

Orienting with Positive Potentials of Internet Children must get guidance from the parents to explore the positive potentials of the internet. They should identify that checking email, maintaining social media networks, or surfing YouTube videos are few minor features of the internet. Instead, the internet world has vast potential to pursue an academic career, a venue for a creative playground for kids, a source of family entertainment, and a significant ground for sharing productive resources. Children must comprehend that the internet also offers a powerhouse of general knowledge capable of providing educational resources even more than a university.

Perform Beyond Typical Parenting Model Parents may adopt an 'Adaptive Parenting Approach' to develop an all-inclusive parenting model for safeguarding children from cyber aggression[15]. The parents must attain technical efficiency and need to lead the children with personal examples. To achieve such trust of children, parents must follow an authoritative parenting style emphasizing on work-life-screen time balance. This parenting strategy will create an environment to explore constructive potentials of the internet. However, even after following all countermeasures, parents must remain prepared to accept any unusual online behaviour of the children. In such a situation, parents need to develop a methodological approach to solve the crisis for bringing the children in a harmonious environment of life.

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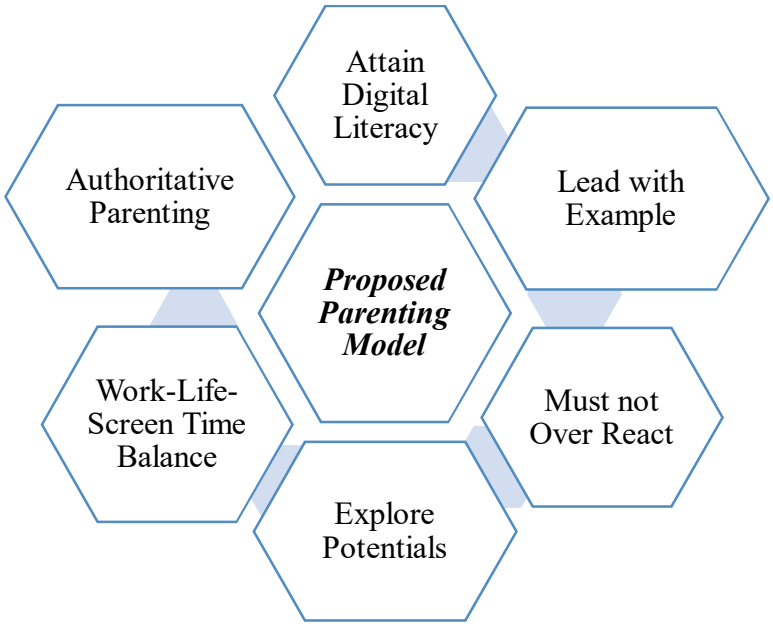
[14] Wagenseil, Paul, Parental Control Device May Have Made Kids Less Safe, January 22, 2018

[15] Islam, Md Ashraful, 'Adolescents' Self-development amid Social Media Dominance: Challenges of Parenting in Bangladesh Perspective', Bangladesh University of Professional Academic Journal, Volume 7, Issue2, December 2019.

Figure 1: Proposed Model of Parenting



Source: Author's construct based on the study

ORGANIZATIONAL APPROACHES AGAINST CYBER AGGRESSION

A Coordinated Approach to Ensure Online Safety of the Children Bangladesh Army can adopt the 'Cyber smart' project implemented by the Australian Communications and Media Authority (ACMA). This program is specifically customized for children, parents, and teachers to practice online awareness for remaining safe from cyber threats[16]. Again 'We PROTECT' is a Global alliance framework against child sexual exploitation and abuse adopted by 77 countries in the world[17]. Bangladesh Army can be integrated with this project that aims to make the internet safe for all children. The 'Cob Red Cyberbullying Prevention Program' is another project used in Spain that gives a forum to the kids and adolescents to discuss social and institutional ethics[18]. 'Cyber Training for Parents Program' is another part of the 'European Union's Lifelong Program' that offers parents to go online for improving digital skills and provide tools to prevent and identify cyberbullying. Bangladesh Army can use tested digital forensic tools like 'Round Up and Child Protection System' to monitor networks involving the sharing of child sexual abuse materials (CSAM)[19]. Besides, Bangladesh Army may impose ban on the Google Apps like Tiktok, Likee, Bigo Tinder etc. those offer no constructive values.

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16 Australian Communications and Media Authority (ACMA) Report 2018, Australian Government

17 Children in a Digital World, UNICEF Report, 2017

18 Ortega-Ruiz, Rosario, Rosario Del Rey and José A. Casas, 'Knowing, Building and Living Together on Internet and Social Networks: The Con Red Cyber Bullying Prevention Program', International Journal of Conflict and Violence, vol. 6, no. 2, 2012, pp. 302–312.

19 Peersman, et al., 'iCOP: Live forensics to reveal previously unknown criminal media on P2P networks'.

Child Cloud Computing 'Service for the Children Bangladesh Army may start 'Child Cloud Computing' service for the children in their educational institutions and residential area. The service should equip with rich academic referential contents required for the study as per age group. Beside study materials, the cloud may contain many kid-friendly games, cartoons, movies, and other constructive programs. The theme of 'Cloud Computing' may orient the children with history, culture, and heritage of the country. The children may have access to those contents both at school and at home.

Enhancing the Versatility of Children Club Traditionally**,** Bangladesh Army conducts several enrichment programs through Children Club in almost all the garrisons. This exemplary and well-organized institution teaches arts, culture, second language, and conducts several co-curricular activities for the cognitive development of the Children. The versatility of this institution, if enhanced further, may act as the primary driver to divert the cyber-mania of the children to the intellectual and societal development.

Enrich Social Bonding Getting close to the children and not allowing them to stay alone are two crucial factors to keep the children safe from online strangers. To ensure that, children can be allowed to attend all social activities of parents, including programs of the ladies' club. Bangladesh Army can construct' Kids Zone' in the residential and ladies' club area. Besides, remarkably face lifting and facilitating all kids' playgrounds will attract the children to come out from the introvert world of Cyber-mania. Organizing friendly matches, cycling, hiking, sight-seeing, and picnic for kids in the garrison may detoxify the children from cyber addiction.

Conducting Cybersecurity Audits Bangladesh Army may conduct a periodic cybersecurity audit on child cybercrime and general cybersecurity governance. The audit should also encompass the incidence response process and reporting chain of a cyber-attack. Local Signal outfits of the garrison can immediately start conducting the audit for the safety of the military personnel and organization itself.

Developing Cyber Academy and Specialized Cybersecurity Team Bangladesh Army need to build a special cybersecurity team to detect and respond to cybercrime against children. Bangladesh Army must have certified cyber specialized on network defending, ethical hacking, penetration testing, security analysis etc. To attain this, Bangladesh Army can go for collaboration training with EC council, Fortinet, CISCO, Splunk, MIS Training Institute etc. Bangladesh Army needs to establish a Cyber Academy to develop a specialized cybersecurity team and to conduct a digital literacy program for every member.

Establishing Cyber Command Estonia, France, Germany, Italy, Netherlands, Norway, Spain, and Turkey has already established standalone cyber command or services in their armed forces. Many other countries developed offensive cyberspace capabilities in their military intelligence[20]. This outfit can protect the future generation and defend the military networks, weapon systems, and infrastructures. At present, to conduct information operation, and to protect the nation against future cyber-attacks, establishing 'Cyber Command' is one of the essential prerequisites.

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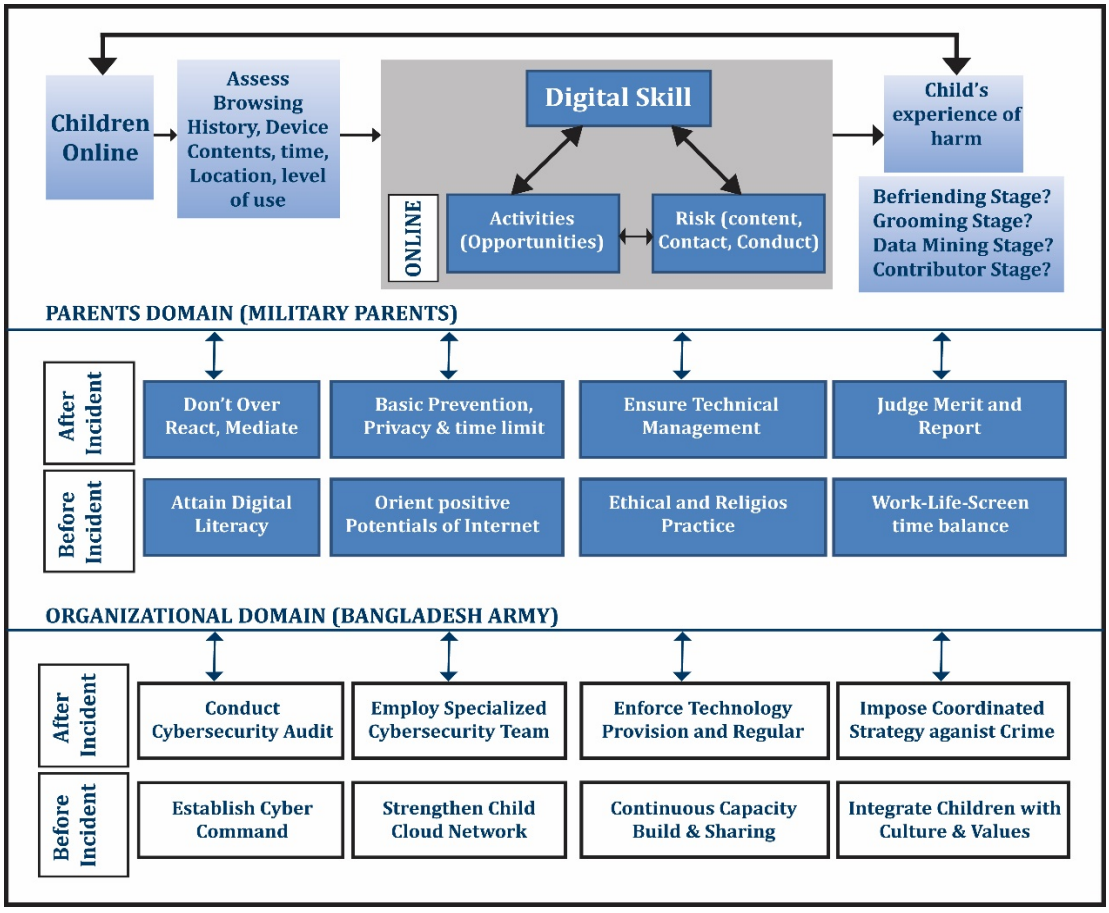
[20] Pernik, Piret, Preparing for Cyber Conflict Case Studies of Cyber Command, December 2018

A Framework of an All-Inclusive Approach The following figure illustrates an all-inclusive domestic and organizational workflow to systematically safeguard the children in the military environment from cyber aggression:

Figure 2: A Framework to Safeguard Children from Cyber Aggression



Source: Author's construct after analysis

Conclusion

In this era of technological dominance, cyber aggression is the most puzzling theme of argument. The children grow in the military environment of Bangladesh Army are critically prone to detrimental effects of the cyber domain. In this scenario, military parenting is pursuing a vertical challenge to nurture kids on the right path. To safeguard military children, parents must earn digital literacy to read the psychology of the children. Besides technical management of filtering the contents, religious motivation, and grandparental influence can act as spiritual motivating factors against the decay. Finally, parents should address their risky online behaviour and adopt an ideal military parenting model to fight against cyber aggression.

In an organizational approach, Bangladesh Army first needs to analyze and adopt child-saving projects those different international organizations already implemented. Besides, enriching children's societal connection, the organization may build cloud-based service to keep the children safe from cyber addiction. In the strategic frame, establishing cyber command, conducting cybersecurity audits, and developing a specialized cyber team may play a significant role to withstand against any cybercrime. This coordinated effort will eventually address all the challenges of parenting in the military environment against cyber aggression.

Recommendations

1. Bangladesh Army Information Technology Directorate can conduct a feasibility study to adopt 'Cyber smart' project, 'We PROTECT Global alliance framework, "Cob Red Cyberbullying Prevention Program', and 'Cyber Training for Parents Program' for the safety of the children from cyber aggression.

2. Bangladesh Army Information Technology Directorate can conduct a feasibility study to establish a 'Cyber Command' structure for attaining the capability to encounter cyber attack against the military network and to safeguard the members of the Army.

3. Bangladesh Army may conduct 'Cyber Audit' program using the existing capacity of Divisional Signals Battalions.

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SOFT SKILLS TRAINING: A PREREQUISITE TO ENHANCE THE EFFICIENCY OF THE JUNIOR LEADERS OF BANGLADESH ARMY

Major Md Tariqul Islam, psc, AEC

In military, the ultimate weapon is a highly trained mind. A highly trained mind can attain unbelievable success during critical time. (Gross, 2018)

Abstract

Soft skills are the skills that we mostly need both in our personal and professional life. The junior leaders (JCOs/NCOs) of Bangladesh Army need to be trained on pertinent soft skills to meet the demand of the future battlefield and for successful accomplishment of their assigned tasks. This study was intended to evaluate the necessity of soft skills training for junior leaders, identify the pertinent soft skills for them, identify existing opportunities to impart those soft skills and finally to identify the ways to inculcate those soft skills to the junior leaders. At this backdrop, this study considers that the lack of soft skills training facilities in the existing training system for the junior leaders of Bangladesh Army hampers their performance in executing their roles and responsibilities both home and abroad. At this milieu, the study was carried out through qualitative analysis. The paper reflected an accurate picture of the present training system to address all the limitations in imparting soft skills training and finally a few recommendations were proposed. It is expected that the proposed soft skills training systems would have a substantial significance in the conduct of overall training of Bangladesh Army. The study will provide an insight and better understanding of the soft skills as a whole in uplifting the professional efficiency of the junior leaders of Bangladesh Army which will help bringing qualitative changes in the days to come.

Keywords: Soft-skills, training, efficiency, junior, leaders, Bangladesh Army.

Introduction

Human skills are considered as soft and hard skills. Hard skills are often referred to as technical skills and easy to quantify. Soft skills, on the other hand, are subjective skills that are much harder to quantify (Sanjay, 2016). Recently, more and more people around the world have brought up the topic of soft skills, its importance at the workplace and influence on the overall hierarchy and mood within any organization. It is considered as 'power skills' (G, 2018). The very first mention of it dates back to the U.S. Army in the 70s but it was all about training the soldiers. From then onwards, soft skills were emphasized as a way to find the best approach to a person to achieve a goal. This skill is also considered as the key for reaching a non-conflict environment which is an ideal thing for everyone who works in a team. Hard skill allows you to place your foot into the door (opportunity) and soft skill allows you to be comfortable in the room (Efficiency) (Saleh, 2017). The existing training facilities for the junior leaders provide very less scope for attaining the required soft skills in discharging their challenging responsibilities more effectively

(Islam, 2019). Besides, the junior leaders of Bangladesh Army inherit very less soft skills from their underprivileged socio-economic background. Hence, one of the prime focuses in training the junior leaders needs to be on soft skills training with a view to developing their emotional and intellectual capabilities to accomplish their assignments both at home and abroad more efficiently.

Junior Commissioned Officers (JCOs) and Non Commissioned Officers (NCOs) are considered as the junior leaders of Bangladesh Army. The expectations from the junior leaders of Bangladesh Army have grown greater than before in manifold due to recent up-gradation of their status, shortage of officers in the unit and change in trends of modern warfare. Junior leaders of Bangladesh Army are nowadays exposed to diversified working environment and assignments both at home and abroad. They work with other Govt. organizations frequently in aid to the civil administration. They work in different important appointments of various Sub-units/Units/ Headquarters/Organizations as Extra Regimental Employment (ERE) and in a collaborative manner in different important assignments of UN mission. Moreover, their basic roles and responsibilities in their own unit environment have also been changed a lot over the time (Alam, 2001). In the ongoing complex scenario of their working environment, they need to think of various alternatives to solve the multidimensional problems and decide at their own the best one. Furthermore, the challenges will be more complex in future battlefield and peacetime working scenario as well (Arthur S. Collins, 1990). These diversified and constantly changing present and future working environments are leading to an increased reliance on, and demand for, soft skills in the junior leaders of Bangladesh Army.

In this paper, an endeavour has been made to identify the ways of inculcating the pertinent soft skills after examining its relevance for the junior leaders of Bangladesh Army. In doing so, initially what are soft skills will be defined. Later on, the necessity of soft skills training will be analyzed. Thereafter, pertinent soft skills for the junior leaders will be identified. Subsequently, existing opportunities or scopes of soft skills training for the junior leaders will be highlighted. Finally, the paper will suggest a comprehensive roadmap to inculcate the required soft skills for the junior leaders. In this study, the term junior leaders only incorporate the JCOs and NCOs of Bangladesh Army. The requirement of soft skills training for the junior officers has been kept out of the purview of the paper.

What are Soft Skills?

'Soft skill' is a composite expression, and each of the two words explains a defining aspect of the concept. It is now referred by many education leaders through more formal word "thinking dispositions". A soft skill is a personal attribute that supports situational awareness and enhances an individual's ability to get a job done. Now, in the 21st century, soft skills are a major differentiator but those are also much harder to measure or evaluate and never fully mastered. The Collins English Dictionary defines the term "soft skills" as desirable qualities for certain forms of employment that do not depend on acquired knowledge: they include common sense, the ability to deal with people, and a positive flexible attitude. In other words, soft skills are a combination of people skills, social skills, communication skills, character or personality traits, career attributes, social intelligence and emotional intelligence quotients, etc. which enable

people to navigate their environment, work well with others, perform well, and achieve their goals with complementing hard skills. A great first step in personal development is to recognize and acknowledge the areas in which one need to improve because soft skills encompass a relatively large category. There are a number of ways to develop or enhance these skills. As stated by International Applied Military Psychology Symposium-2019 "The strength of an army is not in its weapon; its strength is in its people, therefore, it is imperative to seek constant improvement of all individuals. Soft skill training in perspective of the present global scenario is one of the most demanding essentials for the overall development of an individual.

Necessity of Soft Skills Training for the Junior Leaders

Bangladesh Army has already undertaken numerous endeavours to discharge the responsibilities to the junior leaders. In this scenario, unless the overall standard of junior leaders is enhanced through different soft skills training, the prospective execution of mission command will not be effective to face the current and future challenges of Bangladesh Army (Alam, 2001). Furthermore, this lack of essential soft skills in the junior leaders will have long term effect on the overall organizational efficiency of Bangladesh Army in the days to come. The details of necessities of imparting soft skills to the junior leaders of Bangladesh Army are enumerated as follows:

a. **Deficit in Cultural and Social Capital.** Many of the soldiers of Bangladesh Army are from remote rural areas where access to modern education is a far-reaching issue. Bourdieu's 'Theory of Capital' as revealed from his sociological studies (Bourdieu, 1986) perceives that the location of learners' families in the social space is determined by the amount and forms of capital (cultural, social and economic)[1] possessed by them. Thus, social inequality in education is largely perpetuated because students from low-capital families, for example, have lower educational achievement, while students from high-capital families have higher educational outcomes. Parental education is also a major source of children's cultural and social capital. A major portion of the parents of our soldiers are farmers, day laborers, fishermen, local businessmen, carpenters, and shopkeepers (Islam, 2019). In light of the above, because of the deficit in cultural and social capital and lack of modern education, often it is found that the JCOs/NCOs are suffering with difficulties in assimilating different orders given to them by their superior officers. Besides, due to their lack of adequate command over language, they often fail to communicate effectively with both commanders and under commands. If the clerks could achieve desired language efficiency in both Bengali and English, the pressure of officers in drafting hundreds of official letters would reduce to a great extent (Kamrul, 2019). In

[1] Cultural Capital can be described as what we have and what we know. If Cultural Capital is what we know, and what we have, Social Capital is who we know. The amount of Social Capital depends on social network. Economic Capital is the money or assets that can immediately or directly be converted into money. This capital can be transformed into other forms of capital over time.

order to get rid of this situation, soft skills training on communication and interpersonal skills is a need of the time.

b. **Diversified Responsibilities of the Junior Leaders.** The junior leaders of Bangladesh Army are performing multifarious roles and responsibilities both at home and abroad. These multifaceted roles necessitate pertinent soft skills training to perform their assigned jobs more successfully and pragmatically (Kamrul, 2019). They actively play a very important role in different 'Aid to Civil Administration'. As a result, they need good interpersonal skill, self-confidence, and team management skills. The junior leaders are posted on deputation in Rapid Action Battalions (RAB), National Security Intelligence (NSI), Different Embassies, and Directorate General of Forces Intelligence (DGFI), etc. They need to adjust themselves being flexible with the changing scenario. As a result, they need to have good situational awareness and problem solving capability. They need good communication skill in both English and French in UN mission. Besides, they need to have good negotiation skill as well.

c. **Preparedness to Face the Challenges of 21st Century.** Current socio-economic environment and improved military technology have made army's educational requirement more pressing than ever. In that scenario, JCOs/ NCOS are expected to free up officers from mundane duties to enable them focus on more important tasks. Apart from traditional military and security threats, the present days' military is also confronting threats from natural disaster, ecological imbalance, rampant proliferation of terrorism, insurgency, drug trafficking, refugee management and gun running, etc. Hence, training the junior leaders on relevant soft skills for their capacity building is a need of the time. Moreover, Bangladesh Army needs to gradually change its cultural mindset from direct control to directive control, from zero defect syndromes to promoting initiative. That demands few intangible qualities of the organization e.g. trust, expertise, experience, emotional intelligence, situational awareness and above all the culture. The relevant soft skills training can inculcate this culture gradually to face the challenges of 21st century.

d. **The Contemporary Socio-cultural Changes.** It is adequately observed that socio-cultural dynamics have undergone substantial changes not only in Bangladesh but also in the whole world. These changes have both positive and negative ramifications on our society and on soldiering too. It is very important to keep identifying the negative impacts of socio-economic changes on military society and addressing them squarely by imparting the pertinent soft skills training. Modern society generally fosters individualism, freedom and rights of the individual. Army, on the other hand, generally fosters conformity, obedience, hierarchical organization and subordination of the individual to his unit (Bentley, 1992). Thus, a conflict of culture is likely amongst modern day soldiers. Crimes due to the socio-cultural changes are on significant rise as well. Overuse of smart phones, social networking, etc. are also creating social disorder. In this perspective, training on self-control, self-motivation and stress management is a need of the time.

e. **Implementation of Military Values in Professional Life.** The set values of Bangladesh Army such as honour & pride, honesty & integrity, loyalty, patriotism, respect, justness, courage, service before self, trust and faith, and comradeship are all soft skills. Our junior leaders can tell the military values as most of them have memorized those but they cannot describe it or do not feel it with its in depth context. Even they cannot understand the actual implication of these values in professional and personal life (Islam, 2019). As a result, they need deliberate soft skill training for the better acquisition of these values.

The strength of an army lies in the competence of its men. Well-equipped and forward looking approach by imparting soft skills would fulfill this craving of achieving excellence. It is the soft skill training which can train and prepare the junior leaders through behavioral research and high performance optimization with a view to creating required values in them which will continually enrich, equip, enhance and build capacity. Thereby, it will help the junior leaders to achieve a global benchmark.

Pertinent Soft Skills Training for the Junior Leaders

Soft skills, often called people skills, are one of the talked of the topics for training the men in the ever changing scenario of 21st century. It may hone abilities to resolve conflicts, solve problems, and gain confidence— an invaluable trait in human personality (Jennifer, 2018). On the other hand, a lack of soft skills can limit someone's potential, or even be the cause of downfall in any profession (Sinha, 2017). A great first step in personal development is to recognize and acknowledge the areas in which one need to improve because soft skills encompass a relatively large category and there are a number of ways to develop or enhance these skills. The pertinent soft skills training for the junior leaders of Bangladesh Army are as follows:

a. **Communication Skills.** The training on this skill may cover a vast array of communication needs and scenarios, such as pass down the orders/instructions, asking for a help, and speaking one on one or two large groups, etc. The training on this skill will also improve leadership, assertiveness, social skills, public speaking, persuasion and presentation skills, etc. (Kamrul, 2019). How a leader communicates with his soldiers is one of the most important motivating and demotivating factors. Moreover, in the present perspective, reasonable efficiency in communicating in different languages is a need of time as the junior leaders are performing their responsibilities in the international environments as well.

b. **Team Management Skill.** Professional excellence comes through teamwork (Goleman, 2016). The weaknesses of junior could be corrected through teamwork. The scopes of teamwork are applicable in games and sports, collective training, group assignment etc. As a result, junior leaders need to be trained on this skill so that they can effectively lead the team to accomplish their diversified responsibilities.

c. **Soft Skills Training on Military Values.** Army values are equally important both for leader and led. The Army has no formal institute to educate and spread necessary

military values amongst all ranks. The JCOs/ NCOs mostly know the military values but they do not know the implication and utility of it in their personal and professional life. As a result, training on all the soft skills of the values of Bangladesh Army needs to be imparted to the junior leaders more precisely in an organized and deliberate way.

d. **Positive Attitude/Motivation Development Skill.** A positive attitude is essential to happiness, joy, and progress in life. This state of mind brings light, hope and enthusiasm into the life of those who possess it (Pupaza, 2019). The junior leaders of Bangladesh Army need to be trained on this skill considering their deficit in their socio-economic background, diversified appointments and 21st century challenges.

e. **Effective Interpersonal Skills.** Good interpersonal skills create significant advantages to build successful relationships (Sinha, 2017). Considering the contemporary socio-cultural changes, diversified responsibilities of junior leaders and their socio-economic deficit, training on interpersonal skill will be a good step for the efficiency development of the junior leaders.

f. **Problem Solving Skill.** In military, the leaders remain encircled with problems. Therefore, problem-solving becomes part of the responsibility of military leaders (Rashedul, 2019). This is echoed by Harlan Cleveland who says, "Leaders are problem solvers by talent and temperament and by choice" (MCkinney, 2015). In many occasions junior leaders fail to take appropriate actions facing a problem due to ignorance. The training on this skill will make them resourceful and able to creatively solve problems that will inevitably arise sense of taking ownership of problems without leaving them for someone else.

g. **Negotiation Skill.** "The smartest strategy in war is the one that allows you to achieve your objectives without having to fight" (Tzu, 2000). There lies the question of mastering the negotiation skills for military leaders. The junior leaders confront negotiation challenges every day starting from patrolling in the rebel infested hot spots at mission areas to induce terrorist leaders to share valuable information. These have certainly increased the need of having negotiation skills as a fundamental competency of junior leaders (Imrul, 2017).

h. **Situational Awareness Development Skill.** Situational awareness can be defined simply as "knowing what is going on around us". The term has received considerable attention in the military community for the last decade because of its recognized linkage to effective combat decision making in the tactical environment (Soy sop, 2019). Junior leaders need to be trained on this skill to enhance their efficiency in the complex scenario of future battlefield.

j. **Stress Management Skill.** Stress affects each of us in different ways. Managing stress is all about taking charge: taking charge of your thoughts, your emotions, your schedule, your environment, and the way you deal with problems (Lawrence, 2011). Character development training through developing the resilience to face the challenges of

social change, socio-economic deficit and over commitment can influence in overcoming stress. Hence, adequate training on this skill is a need of the time.

k. **Time Management Skill.** Time provides a distinct perspective in military affairs during peace and war. Even the best plan may fail unless the timing is right. The 'Timing Principle' is all-pervasive in the military service (Goleman, 2016). Hence, junior leaders need to be trained on time management skill for both peace and war time scenario.

There are numerous soft skills which are trainable. The junior leaders of Bangladesh Army need to be trained on those soft skills which are more pertinent for them. Considering the overall perspective of the junior leaders, pertinent skills need to be set to inculcate in them. These soft skills will certainly open up a new horizon for junior leaders to improve their efficiency both at home and abroad.

Existing Opportunities to Impart Soft Skills

There is extreme necessity of developing the professional aptitude of all ranks with special emphasis on JCOs/ NCOs in number of areas to achieve and maintain highest degree of organizational efficacy (Sazedul, 2017). There is no dedicated course for JCOs/NCOs on soft skills training in Bangladesh Army. Few all Arms/Services' courses give an individual some exposure to others' capability/weaknesses, bring synergy in actions, develop jointness, foster inter-personal professional relation, etc. A detail analysis on the syllabi of training establishments/ centres to identify the existing opportunities to impart soft skill training for the junior leaders is enumerated below.

a. **Training at Centres and Schools.** The soldiers are mostly recruited in Army as Secondary School Certificate (SSC) graduates. After the recruitment, recruit training centres and schools put adequate emphasis on military training and development of leadership traits. Due to the emphasis on military training, the regimental centers cannot give much importance on improvement of soft skills as it demands. The six months'/one years' training in training centers for the recruits encompasses diverse military training activities, therefore, emphasis on required soft skills does not receive adequate share of efforts. As a result, soft skills training is neglected for the potential junior leaders in their respective training centers.

b. **Formation/ Unit Level Training.** Emphasis on soft skills development training is inadequate in the unit/formation level training. Few motivation classes are conducted at unit level mostly by the Religious Teacher (RT) and JCOs/NCOs of the unit. Officers get very less opportunity to conduct this motivation classes due to the shortage of officers in the unit and their excessive commitment. Formation level training is mostly focused on specific issues like Basic Map Reading, arms/services commando cadre, cadre for various appointments, MT driving, ICT and different orientation/refresher cadre, etc. In that backdrop, soft skills training is a far reaching issue at Unit/Formation level training.

c. **Training at NCOs Academy.** In NCOs academy, junior leaders are exposed to limited instructional aspect of leadership as well as soft skills acquisition. NCOs Academy has added a new dimension to train our NCOs on leadership. However, specific training on required soft skills for the JCOs/NCOs of Bangladesh Army with adequate emphasis and allocating required number of periods/classes are yet to be imparted in the courses of this Academy.

d. **Army Level Courses.** Analyzing the Army level courses for the junior leaders in light of ATP-00-004 published by ARTDOC, it was found that few leadership classes are conducted in few courses as a leadership package for only 2 to 3 days. There is no option for imparting the soft skills training in any of the Army level courses.

e. **Higher Studies Programs.** With the passage of time, the necessity of intellectual development of junior leaders was felt by the higher authority of Bangladesh Army. In that perspective, Niche-1 programme for the recruits, offered by BOU, is ongoing in all the training centers/formations. Along with this, Engineering programmes for Engineers, Signals and EME soldiers are conducted under BTEB and BoDS and BA/BSS programmes are run under BUP for serving JCOs/ORs (Islam, 2019). It is surprising to note that despite ambitious objectives in all those training packages, no training is imparted specifically on any of the soft skills.

The existing training facilities do not provide sufficient scopes for imparting soft skills training to the junior leaders of Bangladesh Army. Organized training of the junior leaders on the pertinent soft skills is a need of the time. Therefore, adequate measures are necessary to impart the soft skills to the junior leaders to improve their efficiency for shouldering the responsibility at the expected level.

Ways to Inculcate the Relevant Soft Skills

An individual JCO/NCO can overcome all adverse situations and accelerate soldiering performance through acquisition of related soft skills. Acquisition of soft skills will also instigate a junior leader to sacrifice self-interest and uphold characteristic attributes which will ultimately make him upright junior leader with loyalty and confidence towards superior. In that connotation, certain steps need to be taken to inculcate the soft skills to the JCOs/NCOs to enhance their professional efficiency. Few steps are identified as follows for inculcating the soft skills to the junior leaders.

a. **Online Soft Skills Training.** Soft skill training is possible even through internet/Online learning platforms like Udemy, Edx, Coursera, and Khan Academy, etc. Browsing through various educational applications on the Google Play Store or Apple App Store may also provide opportunities to acquire necessary soft skills for free and through interactive options (Islam, 2019). However, Bangladesh Army can open a website for online soft skill training where all the selected contents for acquiring pertinent soft skills may be uploaded. The website may be translated into Bengali for the easy assimilation of junior leaders.

b. **Soft Skill Training through Host Organizations.** There are several organizations that host events that range from one-day workshops to three months long interactive programs to help people develop these soft skills for professional and personal development. These organizations are specialized in soft skills training and arrange workshops throughout the year. Although their programs are more workplace and corporate-focused, individual can participate in them to take away knowledge and guidelines to enhance their own abilities. Moreover, there are good numbers of corporate trainers in Bangladesh who train the employees in different companies/ organizations on required soft skills. ARTDOC may select the necessary soft skills for the junior leaders and take help of the relevant experts on that soft skills training to prepare the content and train the trainers.

c. **Concept of Establishing a 'Military Mind Academy'.** A 'Military Mind Academy' may be established in line with the Indian Army having analyzed the needs of pertinent soft skills training. The vision of the Academy may be: to flourish as an admired seat of 'knowledge based junior leadership through different soft skills training' for the junior leaders of Bangladesh Army to prepare skilled war fighters with professional acumen for handling the challenges in peace and war both at home and abroad. The academy can be a hub of knowledge management and HRD through pragmatic training on soft skills for junior leaders.

d. **Instilling Soft Skills on Military Values.** Detailed and meaningful understanding of the military values should be imparted among all ranks. However, to instill the values, apart from the existing measures, due importance can be given on the following places/fields:

(1) Study period, seminar, symposium, workshop and project study on specific military values at unit/ formation level.
(2) Case studies on real-life issues.
(3) Publication of exclusive journal on military ethics and values.
(4) Values and ethos booklet to be published in Bengali with adequate historical/literary/religious instances of displaying those qualities for better acquisition.

e. **Training Module for Soft Skill Training.** ARTDOC may prepare a training module on soft skills and include it in the Command, Leadership and Management package in all mandatory Army level courses and cadres for JCOs/NCOs. Junior officers may be trained on this soft skills training module so that they can conduct pragmatic classes on those skills at the units, formations and military training institutions.

f. **Soft Skills Training at Training Centres & Schools/Unit/Formation Level.** Training institutes may be vested with some responsibility to run certain soft skills training by ARTDOC. A number of different short and long term soft skills training for junior leaders may be conducted. Certain soft skills training classes may also be included in the unit/formation level training curricula as well.

g. **Use of VR Technology.** Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Different international organizations are using this technology to train their employees on certain soft skills. Employees get real time exposure with the required skills and they can interact virtually which seems as a real world experience. This technology can be used for imparting the soft skills to the junior leaders.

h. **Emphasis on Soft Skills from Recruitment.** Prolonged recruitment policy may be adopted in place of existing recruitment system where physical and psychological test on the level of acquisition of required soft skills by the potential recruits may be tested.

Like the militaries of developed countries, Bangladesh Army need to take sufficient steps to inculcate this skill based training for junior leaders. It is true that all the steps suggested above cannot be materialized but few steps need to be taken immediately. Thereafter, impact of this training needs evaluation which will subsequently guide in implementing other measures for soft skills training to the junior leaders of Bangladesh Army.

Conclusion

Junior leaders work as buffer between officers and soldiers. Eventually, their performance denotes the performance of Bangladesh Army. Over the years, their importance in executing both operational and non-operational tasks was reiterated again and again by the military leaders of all tiers. Keeping their importance in view, it is a long cherished dream of Bangladesh Army to make them effective junior leaders, trainers, mentors of the young soldiers and adaptive to modern military technology. To achieve this goal, it is the time to plan and induct required skill based training, more specifically soft skill training, focusing on the challenges of performing their roles and responsibilities. This soft skill training endeavour for the junior leaders will surely facilitate the higher command to lead the entire group in a smooth way in complicated and complex situation.

The existing training facilities provide very less scope for the junior leaders to acquire required soft skills, whereas, many of the contemporary armies around the world including the US Army and Indian Army provide adequate opportunities for soft skill training to the junior leaders. Junior leaders of Bangladesh Army inherit very less soft skills for their underprivileged socio-economic background. They need to perform diversified roles and responsibilities both at home and abroad, even beyond Bangladesh Army, which pose greater challenge to them for their lack of required soft skills. Keeping the realities of 21st century into perspective such as natural disaster, ecological imbalance, terrorism, insurgency, refugee and drug abuse, adequate training on relevant soft skills need to be imparted. This will allow opportunities to the junior leaders for self-actualization, professional development and career growth and ensure the prospective execution of mission command in Bangladesh Army. In that view, junior leaders need good communication skill, interpersonal skill, negotiation skill, team management skill, positive

attitude development skill, situational awareness development skill and time management skill, etc. Moreover, social values are changing rapidly. Overuse of smart phones and social networking, etc. is creating numerous social disorders. As a result, training on self-control, motivation and stress management is a need of time. On the other hand, the military values of Bangladesh Army are all soft skills. It is very much necessary to arrange deliberate training on those military values for better acquisition of values by junior leaders. On the contrary, the lack of these essential soft skills in junior leaders will have long term effect on the overall organizational efficiency of Bangladesh Army in the days to come.

All the soft skills may not be required at the same time. But, they are interrelated to each other which cannot be ignored. The junior leaders certainly have many of the leadership qualities, pertinent soft skill training is necessary for the balanced display of all those qualities in them. The existing scenario poses multifarious challenges including socio-economic challenges, socio-cultural challenges and changes in value system, human resources challenges, technological advancement challenges, organizational challenges, higher educational challenges, and challenges posed by some invisible enemies, etc. But, the existing training facilities do not provide significant training on development of pertinent soft skills to face all those challenges. Therefore, little modification in training (inclusion of soft skills training in the courses/cadres) is necessary for JCOs/NCOs which will make them more confident and efficient through their emotional and intellectual development. The study suggests a set of standard soft skills training provisions for JCOs /NCOs such as online soft skills training facilities, soft skills training through host organizations, establishing a 'Military Mind Academy' to impart required soft skills, instilling soft skills on military values, preparing booklet in Bengali for soft skill training, and use of VR technology for soft skills training, etc. However, further study on the relevance of pertinent soft skills training for junior leaders of Bangladesh Army by the organizational formal effort may pave the way for more effective means of inculcating soft skills and identifying other indispensable soft skills for the junior leaders.

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ROLE OF BANGLADESH ARMY IN EARTHQUAKE/LANDSLIDE MANAGEMENT IN CHT: A CRITICAL PERSPECTIVE

Colonel Towhidul Islam, psc

Abstract

Bangladesh Army has been tasked by the Government of Bangladesh (through AFD) to prepare for earthquake/landslide disasters management. Especially in CHT, it has been observed that, there are no other organizations which can perform this task better. Unfortunately, the preparation and the response management are centered in Chattogram city, which is far away from CHT. Moreover, the roads connecting to CHT usually remain usable during major landslide/earthquake crisis. The author identified that CHT neither have enough relief materials stockpiled, nor enough equipment to handle a disaster of greater magnitude. In addition, people are also not trained to undertake such operation professionally. As such, Bangladesh Army needs to work on prepositioning material and equipment, train personnel, prepare area specific plans, do coordinated rehearsal with other agencies to execute those in CHT.

Keywords: Bangladesh Army, CHT, earthquake/landslide, disaster management, professionally, area specific plan, prepositioning, training, coordination.

Introduction

Bangladesh stands as the seventh most risky disaster prone country in the world as per World Risk Index calculated by the United Nations Institute for Environment and Human Security (AFD, 2018). The country is a low lying delta in the Bengal Basin. It has been subjected to periodic calamities and natural disasters. The nature has become more violent and unpredictable owing to global warming and human abuses of late. Sea level is rising and tectonic plates are shifting in unprecedented way. The subsurface interactions of elements are resulting in increased frequency of earthquakes around the planet. Bangladesh being situated along the fault-lines of tectonic plates is vulnerable to this threat more than ever before. The CHT being hilly, inaccessible and situated remotely from centre, demands special attention in this regards.

The government has made progress in preparing for much of these disasters through plans and policies by gradually shifting their disaster management approach to a comprehensive risk-reduction methodology based on common disaster experiences, lessons learned, and the desire to reduce future impacts (CFE-DM, 2017).[1] Bangladesh has already taken some measures to manage earthquake crisis better. The Armed Forces Division of Prime Minister's Office has published a comprehensive guideline for Armed Forces in Disaster Management (DM) to prepare

[1] Bangladesh Disaster Management Reference Handbook-2017(p. 12), 456 Hornet Avenue, Joint Base Pearl Harbor - Hickam, Hawaii: Center for Excellence in Disaster Management & Humanitarian Assistance.

and manage earthquakes. Armed Forces, especially Bangladesh (BD) Army has been designated important roles in this guideline. Accordingly, Army has prepared in terms of resource mastering, training of personnel and communication measures. But owing to various reasons, these preparations seems to be lacking in CHT, which is more vulnerable than other parts of the country.

This write-up will briefly summarize the earthquake and landslide damages of CHT in recent years, outline the roles assigned to BD Army by the Government of Bangladesh, examine the preparedness of Bangladesh Army in CHT in terms of earthquake/landslide management, identify the lacuna and suggest some improvements.

A Short Summary of Earthquake and Landslide Damages in CHT

CHT lays in the fault line of two active tectonic plates; the Indian plate in the west and the Eurasian plate in the east and north. The plate boundary fault and the Dauki fault are inferred in Bangladesh. These faults are likely to generate large earth quakes over M 8[2]. However, the nature, detailed location, and the faulting history on these faults are not well known (AFD, 2018). The region saw some major earth quakes which include the 1548 earthquake, the 1664 earthquake, the 1762 earthquake, the 1869 Cachar earthquake, the 1885 Bengal earthquake, the 1897 Great Assam Earthquake and the 1918 Srimangal earthquake. The record of approximately 150 years shows that Bangladesh and the surrounding regions experienced seven major earthquakes (with Mb=7).

Figure-1: *Geographical location of Bangladesh in terms of tectonic*

Figure-2: *Dauki fault zone*

Source: Bangladesh Disaster Management Bureau, Report-2010

[2] Bangladesh Disaster Management Reference Handbook-2015 (p. 31), 456 Hornet Avenue, Joint Base Pearl Harbor - Hickam, Hawaii: Center for Excellence in Disaster Management & Humanitarian Assistance.

Date	Name	Magnitude (Richter)	Epicentral Distance from Dhaka (km)	Epicentral Distance from Sylhet City (km)	Epicentral Distance from Chattogram (km)
10 January, 1869	Cachar Earthquake	7.5	250	70	280
14 July, 1885	Bengal Earthquake	7.0	170	220	350
12 June, 1897	Great Indian Earthquake	8.7	230	80	340
8 July, 1918	Srimongol Earthquake	7.6	150	60	200
2 July, 1930	Dhubri Earthquake	7.1	250	275	415
15 January, 1934	Bihar-Nepal Earthquake	8.3	510	530	580
15 August, 1950	Assam Earthquake	8.5	780	580	540

In the recent past, a number of tremors of moderate to severe intensity had already taken place in and around Bangladesh. The Sylhet Earthquake (Mb = 5.6) of May 8,1997, the Bandarban Earthquake (Mb = 6.0) of November 21, 1997, the Moheshkhali Earthquake (Mb =5.1) of July 22, 1999, and the Barkal, Rangamati Earthquake (Mb=5.5) of July 27, 2003 may be cited as examples (Bureau, 2010). It is to be noticed that the above mentioned great quakes all took place around the CHT and Sylhet area, which is made of soft earth hills with numerous ravines flowing through. Thus small scale earthquakes and landslides are experienced in the region frequently. However, it seems that Bangladesh did not experience any large earthquake since 20th century for about 100 years. This may mean that, Bangladesh has a high risk of large earthquake occurrence in near future (AFD, 2018).

Bangladesh has one of the wettest climates in the world with most areas receiving more than 1,525 millimeters (82 feet) of rain annually. Around 80 percent of rain occurs during the monsoon season starting in June and ending in September[3]. Though large and small landslides occur almost every year in nearly all regions of the world. But, in the past, landslide was not considered as a major hazard in Bangladesh. However, recently landslide has emerged as a major hazard, particularly after the Chattogram Landslide 2007. Now, landslide is an important secondary hazard in Bangladesh and is closely associated with monsoon and flash flooding. It often occurs in the hilly northern and eastern parts, especially in CHT, where heavy rainfall can cause ground liquefaction and slope failure. When heavy rainfall combines with poor building practices and deforestation, landslides can occur easily. In Bangladesh, specially, June-July is the vulnerable period for landslide when the maximum rain occurs. Landslides are a complex-disaster phenomenon that can be caused by earthquakes, volcanic eruptions, heavy rainfall (typhoons, hurricanes), sustained rainfall, heavy snowmelt, unregulated anthropogenic developments, mining, and others. However, in Bangladesh, landslides are mostly triggered by heavy rainfall. Moreover, underlying causes of landslide include deforestation, hill cutting, unregulated development work, etc. Besides, poverty and landlessness force poor people to live in the risky hill-slopes. Communities affected generally do not have warning. The people most likely to be affected are generally rural, poor, and highly vulnerable. A summary of damages caused by these earthquakes

3 Bangladesh Disaster Management Reference Handbook 2017 (p. 24), 456 Hornet Avenue, Joint Base Pearl Harbor - Hickam, Hawaii: Center for Excellence in Disaster Management & Humanitarian Assistance.

and landslides are mentioned briefly in following paragraphs. Point to be mentioned that, since the effect of earthquake felt far from the epicenter so the damage could not be quantified for CHT only; rather it is quantified considering the CHT as a general area of concern.

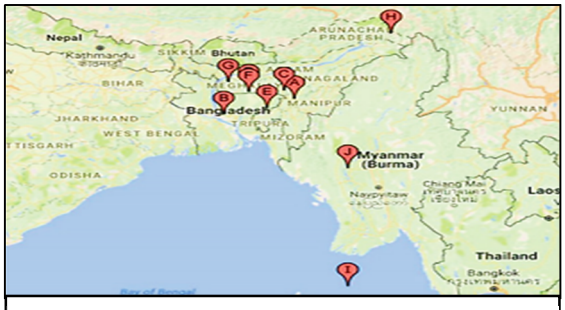

Figure 4: *Epicentres (approximately) of the historical earthquakes in Bangladesh and its surrounding regions. Here A, B, C etc. are representing earthquakes, e.g. "A" signifies "The Cachar Earthquake (1869)".*

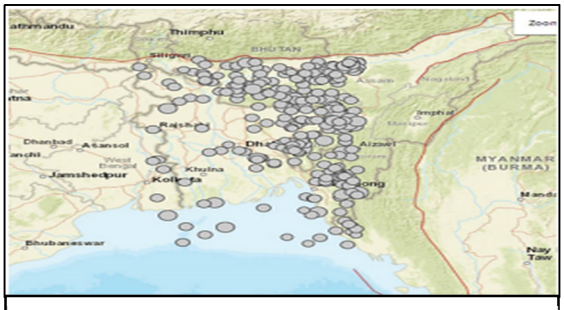

Figure 5: *Earthquakes that were generated in the area of concern. The grey circles signifying the epicentres of the earthquakes and the size of the circle show the strength of the earthquake. The solid red lines are representing the plate boundary.*

a. ***Damage Caused by Earthquake.***

(1) **Cachar Earthquake, 10 January 1869.** This earthquake occurred in the Sylhet region (Silchar). The epicenter of the earthquake was 250 kilometers away from the current capital city Dhaka. According to the estimation by Braseys and Douglas, the magnitude of this earthquake was 7.39 (Douglas, 2004). The Dauki fault is believed to be responsible for this earthquake. Most of the houses were down. But the number of casualties was not reported (Zaman, 2017).

(2) **Bengal Earthquake, 14 July 1885.** The 1885 Bengal Earthquake, also known as Manikganj Earthquake had the magnitude 7.0. Its possible epicenter was at Kudalia in Saturia (Manikganj). This event was generally associated with the deep-seated Jamuna Fault. The earthquake was so strong that it was felt by the people of Bihar, Sikkim, Manipur (India) and Burma (Myanmar). Destructions of Buildings and losses of lives were reported from Dhaka, Mymensingh, Sherpur, Pabna etc. (Zaman, 2017).

(3) **Meghalaya Earthquake, 10 January, 1889.** There is not much information about this earthquake occurred in 1889. The possible epicenter of this earthquake was Jaintia Hills of Meghalaya State in India. The magnitude of the earthquake was 7.5. It affected the Sylhet town and its surrounding regions. No losses of lives were reported (Zaman, 2017).

(4) **Great Indian Earthquake, 12 June 1897.** It is also known as the Shilong Plateau earthquake. The magnitude of that earthquake was 8.0. The earthquake raised the northern edge of the plateau about 10 meters. The epicenter was 230 kilometers

away from Dhaka. More than thousand people died in that event and most of the buildings in the affected region were damaged (Zaman, 2017).

(5) **The Srimangal Earthquake, 18 July 1918.** This earthquake's epicenter was at Srimangal in Moulavi Bazar (Sylhet) which is about 150 kilometers away from Dhaka with a magnitude of 7.6. The losses of lives were not reported (Zaman, 2017).

(6) **Meghalaya Earthquake, 9 September 1923.** This earthquake with a magnitude of 7.1 shook the south of Meghalaya, West Bengal (India) and Bangladesh in the morning. It caused heavy damages in Mymensingh, Cherrapunji and Guwahati. It was also felt in Chattogram and Barisal (Zaman, 2017).

(7) **The Dubri Earthquake, 3 July 1930.** The epicenter of this earthquake was in Dubri, Assam with a magnitude of 7.1. It shook Assam, West Bengal and Bangladesh early in the morning. Heavy damages occurred in Assam, many people were injured but fortunately there were no losses of lives as it occurred early in the morning (Zaman, 2017).

(8) **The Assam Earthquake, 15 August 1950.** One of the largest earthquakes of the 20th century with a magnitude of 8.7 killed about 1500 people in India. Heavy damages were observed. It also shook Bangladesh, Myanmar and a part of China but no significant damages were reported in those regions (Zaman, 2017).

(9) **The 1997 Chattogram Earthquake (also known as the Bandarban earthquake).** It occurred on 21 November at 11:23 UTC in the Bangladesh-India-Myanmar border region. It had a magnitude of Mw 6.1. The epicenter was located in southern Mizoram, India. No fatalities were reported there, but 23 people were killed in Chattogram when a five-story building collapsed (Zaman, 2017).

(10) **The Bay of Bengal Earthquake, 11 August 2009.** The epicenter of that earthquake was located at the North Andaman Islands of the Bay of Bengal and seacoast of Myanmar with a magnitude of 7.5. It was strongly felt from Dhaka but fortunately no heavy damages occurred (Zaman, 2017).

(11) **The Myanmar Earthquake, 24 August 2016.** The epicenter of this earthquake was in 25 kilometers west of Chauk in Myanmar with a magnitude of 6.8. It was strongly felt in Chattogram and Dhaka. 3 people died in Myanmar but in Bangladesh, no loss of life was reported but 20 people were seriously injured (Zaman, 2017).

b. ***Damage Caused by Landslides.***

(1) Landslides occur almost every year; however, the scope and scale of 2007, 2010, and 2017 were some of the worst. The table below shows that the rainfall amount and severely affected population are not correlated; though, it can be argued that this highlights the importance of manmade factors as cause of landslides. The landslides of June 2007 killed 135 people and affected 1.5 million people when heavy monsoon rainfall intensified by a strong storm from the Bay of Bengal caused abnormal precipitation in the landslide area(Bangladesh, 2018). Due to heavy rainfall during 10 -11 June 2007, landslides and collapsed walls caused widespread damages in six areas of Chattogram and in different Upazillas of the Division. Beside death toll, 150 people were injured and 2,000 families were displaced (Disaster Management Bureau, 2010).

(2) In 2010, the landslides triggered in Cox's Bazar and Bandarban had mainly occurred in areas with a large Rohingya population, where makeshift shelters are prevalent. The Rohingya population, since then, has increased significantly and landslides in the near future are expected to have a much higher affected population and death toll (Bangladesh, 2018).

(3) During the landslides of June 2017, it was reported that 80,000 people were affected across all five districts of Chattogram Division. However, among these, 42,000 were considered severely impacted because their homes had been destroyed and 160 people died. Besides, a huge amount of property damaged which worth 223 million USD. The most affected districts were Chattogram, Rangamati and Bandarban. Though the number of people severely affected is quite large, there is a clear decrease in affected population since 2007. This can be attributed to the resilience planning being done to address landslide risks (Bangladesh, 2018).

DATE	JUNE 2017	JUNE 2010	JUNE 2007
Affected Population	160	60	135
Causalities	160	60	135
Affected Areas	Bandarban Chattogram Cox's Bazar Khagrachhari Rangamati	Bandarban Cox's Bazar	Chattogram
Rainfall (mm)	510	461	348

(Source: Start Network, Bangladesh Disaster Summary Sheet on landslide)

(4) Bangladesh Army lost five of its valiant members in this incident which includes three officers. Besides a good number of soldiers were injured.

Role Assigned to BD Army by the Government of Bangladesh in Disaster Management

The National DM Policy, Plan, Standing Order on Disaster (SOD) and Act The National DM Policy defines the national policy on disaster risk reduction and emergency response management. It describes the strategic policy framework and national principles of DM. Besides, National DM Plan was prepared to give out necessary guideline, instructions and action plan. In line with this, SOD has been prepared with the objective of making the concerned persons understand their duties and responsibilities regarding DM. The DM Act-2012 creates the legislative framework under which disaster risk reduction and emergency response management is undertaken in Bangladesh and the legal basis from which activities and actions are managed. It provides the legal basis for participation of Armed Forces in Government DM Effort (AFD, 2018).

General Guidelines for all Disaster Management (DM) The Comprehensive Guideline for Armed Forces in Disaster Management tasks Bangladesh Army to reduce risk in emergency response time. Emergency response time is further divided into Normal Times, Alert and Warning Stage, Disaster Stage and Early Recovery and Rehabilitation Stage. These are highlighted in subsequent paragraphs.

a. **Risk Reduction.** Bangladesh Army needs to develop sectoral risk mitigation and preparedness plan through conducting detailed sectoral risk assessment. It needs to take care of the budgetary provision, communication system, staff education and awareness training in DM issues, develop disaster contingency plans, establish effective monitoring and evaluation system to ensure appropriate utilization of resources. It also needs to mark the chemical risk prone area and arrange regular seminar and observed preparedness regarding toxic chemical substances on Chemical Weapon.

b. **Emergency Response.** Bangladesh Army being the biggest trained standing force is the obvious choice for any emergency response situation. Emergency response for natural disasters can be understood best under following time triggered frameworks.

(1) **Normal Times.** This stage denotes general preparedness responsibility for all time to face a natural disaster. This includes emergency response planning like warning and alerting signals, communications systems, exercises and assessment of response preparedness, security of installations, equipment and personnel, identification of resources to assist response and relief operations, identification of Task Force as reserve comprising infantry company, engineer, doctors and medics etc. Earmarking for appropriate vehicles and transports are also an Army responsibility. Besides Army need to maintain liaison with civilian administration and arrange training for disaster scenario management.

(2) **Alert and Warning Stage.** Army formations will establish control rooms and issue warning order to all concerned in case of an impending disaster scenario. It will also rapidly mobilize necessary forces, including reserves, if the scenario demands so. Army will coordinate with civilian authorities for evacuation, rescue, relief, health care and rehabilitation activities. It will also report the situation and activities to the coordination cell of the Prime Minister's Monitoring Cell.

(3) **Disaster Stage.** Army formations will man a disaster control room round the clock. This control room will collect information and update the PMO. Army will participate directly in the decontamination, dead body management etc. and assist other organizations. It will deploy task forces in consultation with PMO and MoDMR as requested. It will also assist local administration by provision of emergency evacuation, collapse structure search and rescue operation, removal of dead bodies and debris, medical services including field hospitals if necessary, disease prevention, temporary shelter construction and operation, damages; losses and needs assessments etc. At this stage Army will also undertake relief operations in all affected areas and assist local administration for implementing rescue operations.

(4) **Early Recovery and Rehabilitation Stage.** In this stage Army will conduct a survey in affected areas and assess requirement of relief and rehabilitation. It will also assist local administration in removing debris, improving environment, provision of medical services for treatment of injured persons and also to prevent epidemics, provision of pure drinking water etc. It will also help local authority to construct temporary shelters, participate in reconstruction and rehabilitation operations as requested by civilian administrations(AFD, 2018).

Earthquake and Landslide Management SoD of MoDMR delineates roles and responsibilities of AFD along with other services. Earthquake and landslide disasters are given priority for AFD in SOD, and so did AFD in its guideline for Army. Chapter six of the comprehensive guideline (AFD, 2018) describes the role of AFD and its branches, and also what AFD is doing in trying to organize the response and management of earthquake and landslide disasters. Starting from 2009, AFD has put in efforts to collaborate with think-tanks and specialists to formulate some strategic and operational level guidelines on the matter. In the end AFD has generated simulated scenario for Dhaka, Chattogram and Sylhet city. Rest of the country is still awaiting a detailed risk assessment and disaster management plan. Army has formulated its own version of the SOP in 2012 focusing on earthquake and landslide disaster responses. This is a general tactical guideline, and does not have much detail for specific geographic or demographic scenario.

Preparedness of BD Army in Terms of Earthquake/ Landslide Management in CHT

BD Army has been working as the most vibrant organization in the history of CHT during any type of natural disaster. It is of no denying fact that BD Army plays a significant role during any disaster due to its remote deployment in CHT and better knowledge about the road network and locality. Besides, outstanding organizational capability of mastering required resources in time of crisis and excellent working relationship with local government organizations and the NGOs adds to its professionalism. Experience has shown that military forces are fully effective in disaster management role because of its robustness that can operate in all-weather condition, having all terrain capability and holding required equipment to meet emergency[4]. In the following paragraphs, preparedness of BD Army in terms of earthquake/landslide management is discussed.

a. **Taking Active Part in Disaster Risk Reduction, its Preparedness and Management.** Bangladesh Army takes active part in the events of disaster risk reduction, its preparedness and management. To reduce the disaster risk, BD Army in collaboration with other DM partners identified the probable risk factors related to different disasters. Necessary planning, preparation and management are also being done in line with the comprehensive guideline, which is published by AFD.

b. **Promoting Civil-Military Coordination.** BD Army takes significant initiative in promoting civil-military coordination and measures to the respective area of operations. To response against earthquake and landslide, Army has conducted number of exercises, seminar, conference and coordination meeting with the local partners to promote civil- military coordination, which will be further needed in time of DM.

c. **Conduct of Training and Exercise.** The largest exercise on earthquake disaster in Asia Pacific Region named "Disaster Response Exercise and Exchange" in short DREE is organized in Bangladesh since 2010. It has now become a brand in Bangladesh. Besides, Armed Forces Division along with MoDMR co-hosted 'Exercise Coordinated Response' (COORES)-in April 2019 in Singapore where BD Army has participated with great success.

d. **Preparation of Earthquake Contingency Plan.** There is earthquake contingency plan prepared for each sector of Dhaka City in line with national contingency plan and few major cities outside Dhaka; like Chattogram, Sylhet and Mymensingh. Every year Armed Forces Division is updating the contingency plan of respective sector through conducting DREE.

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4 AFD activities on "Role of armed forces division in disaster management".

e. **Availability of Urban Search and Rescue Team**. There are dedicated Light, Medium and Heavy Urban Search and Rescue team organized in every military formation to manage any kind of disaster. This will highly assist in any earthquake or landslide related disaster.

f. **Web Based Database.** Armed Forces Division has prepared a web based database for Disaster Management related issues. BD Army will be able to prudently utilize it during any DM.

g. **Sustainable Communication System.** Armed Forces Division is working with MoDMR for a sustainable communication system during disaster namely 'Disaster Response Emergency Communication System'. This uninterrupted communication system will be very effective and helpful during any DM operation conducted by BD Army.

h. **Proactive Demonstration on Land-slide Management.** Following the exodus of forcibly displaced Myanmar Nationals in Bangladesh, Armed Forces Division had conducted a proactive demonstration on land slide in Cox's Bazar area in 2018 and 2019 with the assistance of Army.

j. **Participation of Disaster Related Training.** Regular participation in different disaster related seminars, workshops and training by Armed Forces members both at home and abroad also reflects the hard work as well as expertise of Armed Forces in disaster management. Specially, a good number of personnel from BD Army has successfully completed in different DM related training to response effectively in time of crisis.

k. **Establishing and Manning 24/7 Monitoring Cell.** To coordinate with all concerned government organizations and different NGOs, an effective 24/7 monitoring cell is needed in any disaster affected area. BD Army is well trained and capable of maintaining such monitoring cell which is very essential in any DM response system[5].

Identification of Lacuna in Preparedness and Eventual Risks

From the discussion of above sections, it has been identified that, BD Army as an organization has advanced a lot to face any natural disaster. Yet, to support during a major disaster, still there are ample of scope to improve it further. To attain a high standard of DM capacity still we fall short of very effective disaster response preparedness in some major areas. We will discuss those in the subsequent paragraphs.

a. **Lack of Regulations to Prevent Land and Hill Erosion.** It has been observed that due to economic developments in CHT, a lot of unplanned structures are

[5] AFD activities on "Role of armed forces division in disaster management"

being created. These are causing deforestation and unsettling the hilly soil. We do not have enough regulations to preserve the forested hill in its optimum state from erosion or sliding and, to sustain for long time. Neither we have apparatus to implement the regulations.

b. **Lack of Regulating Urbanization in CHT.** Urbanization is taking hold in CHT rapidly. We do not have enough regulations to check it and protect the environment in its original state. This is surely leading to land erosion and land sliding.

c. **Lack of Sensitization of People on Preventing Landslides.** People living in the CHT are not very much aware of the dangers they are causing for their own surroundings. They need to be sensitized so that they listen to the advice of concerned departments and experts. We lack tremendously in this aspect.

d. **Location Specific Plan for Earthquake and Landslides.** We have seen that the guidelines are too general and vague to be put directly into action in an emergency scenario. We need to develop area/location specific tactical plans for action for CHT. CHT being remote and prone to being cut off from communications in case of landslide and earthquake, demands that these plans are kept ready on multiple sites. This will allow it to be consulted and put in effect without delay.

e. **Stockpiling Relief Materials in CHT.** CHT being in the formation area of Chattogram Division, has its central stockpiles of Relief material in Chattogram. In case of a disaster in CHT the roads are very likely to be inaccessible. It will make the disaster management operation costly and time consuming. The stockpiling plan needs to be revisited.

f. **Lack of Communication Arrangements in CHT.** There is not enough communication infrastructure placed in CHT. The cell phone network may not remain dependable in natural disaster like earthquake. The physical road network may render serviceable. Some alternatives need to be catered for.

g. **Lack of Specialized Equipment in Remote Hilly Areas**. There are a few engineering equipment with ECB which can be used in this type of crisis. But there are not any specialized salvage or rescue equipment in ECB inventory which may be helpful during this disaster management.

h. **Less Station of FSCD in CHT.** There are only a few FSCD station in CHT. The department is supposed to create the backbone for rescue operations but it is actually less than meager in CHT.

j. **Lack of Coordinated Training between Army and Civilian Organizations in CHT.** Army had hardly trained with civilian organizations and populace in CHT in the question of earthquake and landslide management.

Suggestion on Improvement in Preparation and Risk Mitigation

We recommend following actions for effectively managing earthquake and landslide related disasters.

a. **Regulating Unplanned Urbanization in CHT.** CHT is experiencing an unprecedented economic development. Almost all the villages can now be reached through metaled roads. This has created hype for unplanned urbanization in CHT, leading to destruction and deforestation of hilly area. Regulations and remunerations need to put into immediate effect to curb this hype. A well planned development plan need to be implemented, keeping the terrain sustainability in focus.

b. **Sensitizing Population for Preventing Landslides.** People need economic means to lead better lives. In CHT, many a times it means cutting and clearing forested hills. This increase the risk of land erosion and results in landslides. People need to be sensitized not to go for unplanned hill cutting for short term economic gains. They need to be alerted that this can result in catastrophic disasters of landslides.

c. **Preparing Area Specific Earthquake/Landslide Related Disaster Management Plan.** Army is one of the major stake holders of security and economic development in CHT. Army has access to almost all the remote corners of CHT. Thus Army has the capability to develop area specific earthquake/landslide response plans. Multiples copies of plans need to be kept ready to put into immediate effect at various tires of the operations.

d. **Stockpiling Disaster Relief and Management Items in CHT.** The nearest relief stock is at Chattogram Cantonment, as that is where the HQ is. This stock may not be able to reach the affected areas smoothly, especially during a landslide/earthquake disaster. We need to create some stockpiles at various nodal points in CHT so that things can flow to any direction where it is most needed.

e. **Preposition Disaster Management Equipment in Various Nodal Points in CHT.** We need to preposition disaster management equipment at various nodal points in CHT for the same reasons. Relying on built-in ECB equipment may not be adequate during an earthquake/landslide of greater magnitude.

f. **Integrated Training for Army, FSCD and Other Organizations in CHT.** Army need to rehearse the disaster management plan. It needs to practice the plan along with other stake holders like FSCD and civilian administration in CHT. The population also need to know how best can they cooperate or facilitate the operation during such emergencies.

Conclusion

Bangladesh is a low lying delta, sitting on soft earth on the junction of fault lines of continental shelves. This makes Bangladesh prone to earthquakes and landslides, CHT being one of the most vulnerable part of the country. The government of BD has tasked armed forces to be ready to manage any such disaster as and when asked by civilian authority.

Bangladesh Army being the lion share of the Armed Forces, and for being deployed in CHT for nation building, is also sharing responsibility to manage earthquake and landslide related disasters in CHT. Bangladesh Army shares armed forces responsibility for risk reduction and emergency response. The response is needed in normal times, in alert and warning stage of the disaster, during the disaster and during early recovery and rehabilitation stage. Unfortunately, there are not much plans done specific to CHT. It is rather found after taking an over view of the disaster management preparation of Army in CHT that, Army is not sufficiently prepared to handle a major earthquake/landslide in CHT.

The insufficient preparedness owes to Chattogram centric preparedness and lack of prepositioning equipment and material in nodal points in CHT. It also owes much to not having plans made for specific areas basing on meticulous risk assessment, and for not having coordinated practices with other stake holders. It also shorts fall as far as sensitizing population is concerned. BD Army needs to look into these issues and take necessary steps to overcome the short falls till the time permits. A quick disaster can cause loss of lives and property of population in CHT. Therefore, Knowledge driven awareness, technology driven mitigation measures and community driven preparedness when integrated with development activity would constitute the ways and means for Disaster Mitigation[6].

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OPERATION SEARCHLIGHT IN THE LIGHT OF THE DEFENSE LITERATURE OF BANGLADESH

Major Gazi Mohammed Tauhiduzzaman, AEC

Abstract

Operation Searchlight, a genocidal attack by Pakistan Army on the mass people and defense personnel of East Pakistan on the night of March 25, 1971 is an inseparable part in the history of the emergence of Bangladesh. The article aimed to view the Military Operation through the eyes of the defense personnel of Bangladesh to find out the detailed intricacies and preparation on this issue. Many a literature has been written on the Liberation War of Bangladesh where Operation Searchlight has been mentioned in a brief and scattered form. Readers do not readily find how seriously and in deliberately the preparations for military crackdown of 25 March were taken by Pakistan Army. The objective of the article is to establish the fact that Operation Searchlight was not a sudden attack to kill few Bengalis; rather it was a deliberate plan for the elimination of a nation taking support from the narratives of the defense personnel of Bangladesh. This research is mainly a literature survey from the secondary sources. The paper has revealed that the Operation Searchlight was inevitable in Pakistan due to very nature of state and interest of the politico-military coterie. Though the final objective of Operation Searchlight was to annihilate a nation but for that Political leaders and the Military junta had to prepare a ground. We often see Operation Searchlight as an attack on Bengali nation on 25 March 1971. Pakistan Army had to do a lot of exercises to execute this operation. This paper showed that Bengalis were considered non martial race and hence were scantily recruited in the army. They were maltreated and deprived of service privileges. As the presence of Bengal Regiment in East Pakistan was a threat to Pakistan Army so they took efforts to induct non Bengalis in Bengal Regiments, few battalions were posted out to West Pakistan from East Pakistan, Bengali officers were removed from important appointments, new troops and sophisticated arms and ammunitions were airlifted from West Pakistan. Anti-Bengali West Pakistani officers were brought to East Pakistan and Bengali sympathizers were removed from service. East Bengal Regiments were deployed outside the cantonments in piecemeal to weaken their combat strength and moral spirit. Efforts were taken to disarm Bengali defense personnel before the execution of the Operation. The operation was the result of the deliberate plan where the political leaders of West Pakistan and the Military generals were intensely involved.

Keywords: Operation Searchlight, East Bengal Regiment, Larkana Conspiracy, punzabization, election 1970, disarm, military buildup, genocide.

Introduction

Throwing political crisis of Pakistan in a quagmire President Yahya Khan left Dhaka in disguise in the evening of 25 March 1971. Before departure he gave order for execution of the

Operation Searchlight, a military operation for the annihilation of Bengalis, a people who voted for Awami League and elected the party to form new government in Pakistan. Pakistani military junta and civil bureaucracy, benefitted from the abundance of East Wing since the creation of Pakistan in 1947 were not ready to accept the results of the election held in December 1970 on the basis of universal franchise. Top military hierarchy of Pakistan was over enthusiastic for an armed offensive to settle this issue of East-West Pakistan. With the approval of the president and support from Zulfikar Ali Bhutto, the military junta devised a plan for genocidal killing in East Pakistan. Accordingly, 'the sleeping Bengalis were attacked at midnight by the soldiers of Pakistan Army with tanks, guns and all other modern armaments including Navy and Air force'[1]. The priority of attacking army was 'to kill Bengali personnel of East Bengal Regiment then the EPR, Police and Ansars first which was to be followed by political leaders and subsequently intellectuals'[2]. The operation was originally planned to be started at 0100 hours on 26 March 1971, but it started much before. Failing to control the killer instinct for long, the Pakistani troops started to come out of the cantonment at 2200 hours on 25 March and engaged in killing, burning, looting and raping unprecedented in human history. This was the beginning of the genocide. The brutal killing of Bengalis continued for nine months that caused death of 3 million people including raping of women and destruction of properties to a horrific scale.

Pakistan was raped, killed and buried by Yahya's treachery and indiscriminate killing of unarmed Bengalis by the Pakistan military. Being attacked by Pakistan Army, the Bengali soldiers of the East Bengal Regiment, EPR, Police, Ansar, Mujahid and mass people put up stiff resistance against the attackers from the very beginning. Without being cowed back they organized themselves under the direction of Bangladesh Government that was formed on 10 April 1971. The Bangladesh Forces Headquarters devised war plan and formed an army to fight the Liberation War following conventional and unconventional tactics. An army of end masse was given short training on warfare to strengthen the war efforts of the Government. The synergistic effect of conventional and unconventional forces left the enemy morally shattered and operationally futile. The final blow wielded by the Allied Forces brought the enemy to its knees. The enemy force that started the Operation Searchlight on 25 March 1971 with the mission of silencing Bengalis finally surrendered on 16 December 1971 to the Allied Forces.

'Punjabi military leadership wanted to eliminate Bengali troops in totality'[3]. Having this plan in mind they started taking preparation for long. The immediate preparation for genocidal attack started after the victory of Awami League in the General Election. Operation Searchlight was the final phase of their long drawn preparation. In fact, after the creation of Pakistan in 1947, the Punjabi dominated Pakistan Army crafted a situation that ultimately led to the demise of Pakistan through a bloody war in 1971. It was the Yahya-Bhutto alliance supported by military junta that attacked unarmed people of East Pakistan for no justifiable reason.

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1 Nasim, ASM, Bangladesh Fights for Independence. Dhaka: Columbia Prokashani, 2002. p. 29.
2 Ibid
3 Wahab, ATM Abdul. MuktiBahini Wins Freedom. Dhaka: Columbia Prokashani, 2004. p. 110.

'Pakistan Army by their action invited Bengal Army, EPR and Police to fight them back'[4]. Operation Searchlight was not an abrupt assault on the Bengali nation aspiring for an end to the West Pakistani subjugation. It was a deliberate plan for which they had detailed preparation. The article is an effort to reveal the intricacies of the military preparation of the Operation Searchlight that Pakistan Army started on 25 March 1971 killing hundreds of thousands of people in East Pakistan.

Statement of the Problem

Operation Searchlight, a military operation for genocidal killing of Bengali people was orchestrated by Pakistan Army in 1971. It was often viewed that this military mission was the brain child of Pakistan Army and it was the consequential event of the result of the election. The main focus of this article is on the preparation and efforts of Pakistan Army and political leadership for the effective execution of the operation. It was the final phase of a deliberate plan, not a repercussion to the impasse created by political leaders of East Pakistan.

Limitations of Study

This research exclusively used defense literatures written by defense personnel of Bangladesh Army. Defense literature of other stakeholders i.e India and Pakistan were not brought under the purview of the article. The gruesome massacre that the Pakistan Army committed throughout nine months in 1971 in East Pakistan has not been included in this article.

Research Methodology

The argument of the article is mainly prepared on the basis of the secondary sources. It is primarily a survey of the literatures penned down by the defense personnel.

Treatment of West Pakistani Military towards Bengalis

Following the process of decolonization after the World War II, the British Government left Indian subcontinent in 1947 creating two independent states, India and Pakistan. In the creation of Pakistan, the Bengali people of erstwhile East Pakistan contributed enormously on being enthused by nationalistic fervor emanated from religion. After the independence like many other organizations, the Bengali elements in Pakistan Army became subject to maltreatment from the West Pakistani comrades. While the British left in 1947, 'Pakistan inherited only 6 infantry divisions and one Armoured Brigade. Pakistan Army kept most of its army assets in West Pakistan. For the defense of 56 percent people of Pakistan in East Pakistan, they deployed only two Infantry battalions and again these two were incomplete battalions'[5]. The army that Pakistan inherited was dominated by Punjabis. There was no genuine effort to end this domination. 'Like civil servants, all the top ranking military officers were from West Pakistan'[6]. Bengalis in

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4 Ibid., p. 121.
5 Uddin, Nasir. Judhdhey Judhdhey Swadhinata (Liberation through wars). Dhaka: Agamee Prakashani, 2018. p. 67.
6 Ahmad, Oli. Revolution: Military Personnel and the War of Liberation in Bangladesh. Dhaka: Annesha Prokashon, 2008. p. 214.

Pakistan used to be harassed for no reason and were often maltreated by West Pakistanis. Even President Ayub Khan, who was an army officer, despised Bengali soldiers openly. While he was General Officer Commanding of 14 Division at Dhaka 'he showed utter hatred and malevolence to the Bengalis. His manner was coarse and insulting to the Bengalis'[7]. Bengalis were not considered as good as West Pakistanis for military profession. 'The promotion prospect of Bengali officers and soldiers in Pakistan Army was very bleak'[8]. West Pakistani officers used to hurl abusive languages on Bengalis. 'Their behavior to the Bengali people was very rude and they treated them like dogs and foxes'[9]. Bengalis were inferior people to them and lesser Muslims contaminated by Hindu culture and tradition.

Representation of Bengalis was very poor in Pakistan Army despite the fact that 56 percent of total population of Pakistan was from East Pakistan. 'Being in absolute minority, they were subjected to abject treatment by their West Pakistani destiny makers'[10]. Especially the Punjabis used to neglect the Bengalis in the Army and a policy of discrimination was followed against them in matter of privileges and promotion. 'Even in Pakistan Military Academy Bengali cadets were not treated well. They were exploited there in many ways'[11]. Urdu, a tongue of minority could be used as means of communication in the Army Officers' Mess, but Bengali was not allowed. In case of posting, Bengali officers did not get fair treatment. They had little scope to be posted to East Pakistan. Thereby 'the Pakistan Army officers from the Western wing antagonized Bengali troops in the army by their contemptuous misbehavior'[12].

Security of East Pakistan was always a less priority in Pakistan. As per the defense policy of Pakistan, the defense of East Pakistan depended on the defense of West Pakistan. In 1948 during Indo-Pak war central government had little arrangement for the protection of East Pakistan. Even 'during the war of 1965 between India and Pakistan, the province of East Pakistan was almost defenseless against the Indian threat'[13]. Pakistan kept 95 % of its air assets and almost its entire navy in West Pakistan. In 1971, East Pakistani's representation in the defense service did not exceed 8% to 9% in both officers and other ranks. 'Thus the Bengali officers always smarted under a sense of deprivation and injustice'[14]. Due to the disparity and maltreatment Bengalis were aggrieved and the soldiers of the East Bengal Regiment revolted when Pakistan army attacked them in March 1971.

Military Intelligence and the Election of 1970

After the fall of Ayub Khan in 1969 General Yahya Khan was made the president of Pakistan. He promised to hold election shortly for handing over power to the elected

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7 Nuruzzaman, Quazi. A Sector Commander Remembers Bangladesh Liberation War 1971. Dhaka: Writers. Ink, 2016.p. 18.
8 Khan, A. Qayyum. Bittersweet Victory, A Freedom Fighter's Tale. Dhaka: The University Press Limited, 2013. p. 19.
9 Rashid, M. Harun Ur. Bijoyer Pothe (Journey to Freedom). Dkaka: Centre for Bangladesh Liberation War Studies, 2014. p. 72.
10 Safiullah, K.M. Bangladesh at War. Dhaka: Agamee Prakashani, 2005. p. 29.
11 Chowdhury, M A Quaiyum. Muktijoddho O Muktijoddha (Freedom Fighter and the Liberation War) Dhaka: Ittadi Grantha Prakash, 2013. P. 59.
12 Wahab, Op. Cit., p. 121.
13 Uddin, Op. Cit., p. 57.
14 Ahmad, Op. Cit., p. 210.

representatives. Before holding the election, he ordered military and other intelligence agencies to carry out a comprehensive assessment on the probable outcome of the election and to evaluate the prospect of Awami League winning the election. 'The instruction was issued secretly mainly to the non-Bengali officers'[15]. Accordingly, Yahya Khan received several reports from intelligence branch but none of the reports predicted that Awami League would get absolute majority in the election. Hence election would not create any problem for president Yahya khan. He was sanguine that the political power would not be handed over to Sheikh Mujibur Rahman. Yahya's intelligence branch anticipated that 'Awami League would not get more than 60% vote in East Pakistan. With that score coalition in the centre would be inevitable'[16]. Army had a belief that Convention Muslim League would get majority seats and 'Awami League would not get more that 30 to 35 seats in East Pakistan'[17]. Being convinced by the reports from intelligence agencies, president Yahya Khan initiated the process of holding a general election in Pakistan.

Result of the Election and Reaction of the West Pakistani Military Officers and Soldiers

Accordingly, the election was held in December 1970 where Awami league begged absolute majority. Awami League under Sheikh Mujibur Rahman won 167 seats out of 313 seats of the Pakistan National Assembly. The result of the election frustrated all the assessment of the intelligence agencies and caused serious concern to the West Pakistani military rulers. Pakistani military officers were not in favor of handing over power to the leaders of East Pakistan. 'Many officers in the military hierarchy including Director General of powerful Inter Service Intelligence (ISI) could not accept the result. Twelve generals were against handing over political power to Mujib'[18]. Bhutto could not bring himself to accept a Pakistan where 'East Pakistanis' would be at the helm of affairs. 'Bhutto cultivated personal relationship with many generals of army, especially Lieutenant General Pirzada who was Yayah Khan's Principal Staff Officer for Martial Law Affairs'[19]. Bhutto was adamant for power and craftily developed a close association with many West Pakistani army officers to attain his covert gains. In fact, the ruling elite in Pakistan were doggedly determined to keep Awami League out of power. With lot of appreciation and discussion Pakistan's politico-military coterie decided to launch military operation in East Pakistan to continue their domination. Hence 'the planning for movement of troops from West Pakistan took place in the month of January 1971 and the movement of troops started in the month of February 1971'[20].

The dominant generals of Pakistan Army condemned Awami League as traitors and were determined to undertake a military action. After the election the Pakistani officers started to avoid Bengali officers which led to the creation of a 'psychological division between Bengalis and

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15 Islam, Rafiqul, A Tale of Millions: Bangladesh Liberation War 1971. Dkaka: p. 64.
16 Safiullah, Op. Cit., p. 18.
17 Rahman, Mohammad Khalilur. Purbapor 1971, Pakistani Sena Gahabbor Theke Dekha (From beginning to End, 1971, Seen from the Pakistani Army Den). Dhaka: Shahittaya Prakash, 2016. p. 17.
18 Hossain, MdSarwar.1971, Resistance, Resilience and Redemption. Dhaka: Mowla Brothers, 2018. p. 13.
19 Khan, Op. Cit., p. 23.
20 Wahab, Op. Cit., p. 96.

Punjabis'[21]. The Pakistan Army officers' echelon was heavily Punjabi zed. Majority of the 'Punjabi army officers came from landlord families, who had tremendous influence in army. They were not ready to hand over political power to Awami League'[22]. Even the Chief of Army Staff General Hamid Khan was extremely anti-Bengali. He was blatantly against the six-point program of Awami League. He exerted pressure on 'President Yahya Khan to apply military force in East Pakistan to solve political crisis'[23]. In fact, most of the generals of Pakistan Army were in favor of military operation in East Pakistan with a view to perpetuating the hegemony of West Pakistan. They could not accept the fact that the Bengalis would form the government due to the perceived threat that such an arrangement would diminish their influence and domination in the Army.

Conspiracy Unfolded

On 17 February 1971, from Dhaka Yahya went straight to the Zulfikar Ali Bhutto's ancestral palace Al Murtaza at Larkana in Sind. The purpose of this meeting was to hatch conspiracy to deny Bengalis of their democratic rights. 'The get together had several top brass of the Pakistan Army including General Abdul Hamid, Lieutenant General Gul Hasan, Lieutenant General Pirzada, Major General Mitha and Lieutenant General Akbar…. Yahya, Bhutto and generals after several days of discussion decided that Sheikh Mujib would not be allowed to form a government'[24]. The Chief of Army Staff General Hamid supported the decision of military intervention in response to the Awami League's demand for provincial autonomy. On 15 February President Yahya congratulated Sheikh Mujibur Rahman as the future Prime Minister of Pakistan. After the secret meeting at Larkana, he changed his mind and languages gaining support from Bhutto and the powerful generals. President Yahya Khan held deliberate discussion with senior army officers and 'they assured him that they would be able to control the situation in East Pakistan easily'[25].

Before the Larkana conspiracy been hatched, on 10 February 1971 at General Headquarters(GHQ) in Rawalpindi a conference was held where Pakistan Army decided not to hand over conference at GHQ was held on 22 February 1971, in presence of Yahya Khan and Regional Martial Law Administrators where decision to impose Martial Law in East Pakistan was taken with a view to bringing law and order under strict control by 'letting lose a reign of terror'[26]. 14 Division located at Dhaka was given a task to plan for an operation codenamed 'Operation Blitz' in East Pakistan. 'The objective of the operation was to impose military rule with full force'[27].

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21 Zaman, 2018. Op. Cit., p. 16.
22 Rahman, Op. Cit., p. 20.
23 Uddin, Op. Cit., pp. 122-123.
24 Khan, Op. Cit., p. 124.
25 Khandakar, A K. 1971: Bhetore Baire (1971: Inside Outside). Dhaka: Prothoma Prokashon, 2019. p. 37.
26 Islam, Rafiqul, A Tale of Millions: Bangladesh Liberation War 1971. Dhaka: Ananya, 2017. p. 71.
27 Bhuyan, Qamrul Hassan. Shestho Somoyer Kotha (Tale of the Best Time). Dkaha: Centre for Bangladesh Liberation War Studies, 2014. p. 69.

A secret conference was held at GHQ in the 2nd week of February chaired by Army Chief General Hamid. In that secret conference the decision to apply military forces in East Pakistan was taken in presence of senior generals. 'After the decision of GHQ, full preparation for military buildup in East Pakistan started'[28]. As a sequel to the previous conferences a special meeting was held on third week of February in Dhaka where all non-Bengali Brigade Commanders of East Pakistan attended where they decided to 'keep all four Bengal regiments in East Pakistan deployed either for Internal Security (IS) duty or for winter training outside the cantonments'[29].

Preparation on Ground

Presence of battalions of the Bengal Regiment in East Pakistan was a concern for Pakistan Army. The intactness of the regiment was posing serious threat for Pakistan Army to execute their military crackdown as the Bengal unit's cent percent soldiers were Bengali. General Officer Commanding of 14 Infantry Division, Major General Khadim Hussain Raja was highly concerned on this sort of formation of Bengal units. To his view, that the Bengalization of East Bengal regiments would encourage Bengali soldiers to foment Bengali nationalism. Hence, he had a plan to change the intactness of the East Bengal Regiment. General Khadim forwarded a plan to Army Headquarters requesting to 'send more non-Bengali regiments to East Pakistan and transfer units of East Bengal Regiment to West Pakistan from East Pakistan'[30]. He also proposed for 'transfer of Bengali soldiers of East Bengal Regiment to the non-Bengali Regiments and to fill up the vacancies created in the East Bengal Regiment with the non-Bengali troops[31]. Basing on the proposal of General Khadim, Army Headquarters decided to 'induct 25% Bengali soldiers into the non-Bengali Regiments and 25% non-Bengali soldiers to the East Bengal Regiments to fill up the vacancies'[32]. Following the decision of Army Headquarters 'a company of soldiers from 1st, 2nd, 3rd and 4th East Bengal Regiments was inducted into 19 FF Regiment through a parade in Dhaka Cantonment on 31 December 1970. In January 1970, a platoon of Bengali soldiers was inducted into25 Baluch Regiment from 1 East Bengal through a parade at Jessore Cantonment'[33].

Despite demand from political leaders to enhance security arrangement in East Pakistan, the central government took no practical initiative on this concern. Pakistan Army had only one Infantry Division, a squadron of F-86 jets and only four gunboats in East Pakistan. 14 Infantry Division stationed at Dhaka Cantonment had four Brigades i.e 57 Brigade at Dhaka, 53 Brigade at Cumilla, 23 Brigade at Rangpur and 107 Brigade at Jessore. 'Beside regular brigades, there were some units to include 29 Cavalry, 43 Light Anti Air Artillery Regiment, 6 Engineer Battalion, 19 Signal Battalion and 149 Infantry Workshop'[34]. To execute the genocide these

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28 Uddin, Op. Cit., p. 126.
29 Bhuyan, Qamrul Hassan (edt). Swadhinata, vol. ii (Independence, vol. ii), Dkaha: Centre for Bangladesh Liberation War Studies, 2011. p. 12.
30 Bhuyan, Qamrul Hassan. Ekattorer Dinpanji (Diary of Seventy-One). Dkaka: Centre for Bangladesh Liberation War Studies, 2017. p. 82.
31 Ibid., p. 76.
32 Ibid., p. 86.
33 Ibid., pp. 83-84.
34 Hossain, Op. Cit., p. 31.

amounts of forces were considered inadequate. Hence, Pakistan Army decided to bring more troops and equipment from West Pakistan. As a result 'new troops begun to pour into East Pakistan from mid-February from West Pakistan'[35]. Aircrafts coming from West Pakistan practically carried no civil passengers. All arriving flights brought in soldiers in civilian clothes. 'These soldiers would not even enter Dhaka through the airport terminal. After deplaning, they would assemble in one of the hangers and would be marched off to the cantonment through the air force base'[36]. From February to 01 March two battalions of army troops, '22Baluch Regiment and 13 FF Regiment were lifted to East Pakistan from West Pakistan'[37]. To strengthen position, Pakistan Army brought two new divisions and a lot of junior officers were posted to East Pakistan. 'A group of senior officers were also sent to see the state of preparedness. Among them were Major General Mitha, Major General Janjua, Major General Omar, Major General Akbar and Brigadier Sadullah who came to East Pakistan with special task'[38]. 9 Division and 16 Division, two new divisions were flown to East Pakistan from Karachi and Quetta in the month of February and March. Major General Rahim Khan, Major General Shawkat Reza and Major General Nazar Hossain Shah were sent to East Pakistan to take the command of 14 Division, 9 Division and 16 Division respectively.

Preparations for genocide were afoot from January 1971. In the first week of January, the 9 Division of Pakistan Army were put on alert. Alongside the military buildup, tanks were brought to Dhaka from other cantonments. In February Pakistan Army strengthened anti-aircraft defense around Dhaka International Airport and other vulnerable points. '40 mm Bofors were sited on tactical ground around the airport'[39]. Important places in Dhaka were reconnoitered by Pakistan Army so that the operation could be executed in time with utmost effect. Due to the imminence of the military crackdown Pakistani officers and men serving in East Pakistan were ordered to send their families home so that they could live under field condition.

Pakistani Air force located in East Pakistan took over the duties at Dhaka International Airport from March 1, 1971 and the Pakistani Army established its full presence in the airport to control the movement of troops. 'It was during these days of March that the senior West Pakistani army officers begun to pour into Dhaka. Major General Mitha, Qamar Ali Mirza and Janjua, Brigadier Harrison and Colonel M R Hassan, all from logistic side came to Dhaka to check on the provisioning'[40]. The weapons of the newly arrived soldiers from West Pakistan were transported quickly and secretly.

As the preparation for operation was on progress, Pakistani officers and soldiers begun to alienate themselves from Bengali officers and soldiers. 'West Pakistani officers were having

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35 Arefin, A S M Shamsul. Muktijuddeher Prekhapote Bektir Obostan (Place of Individual in the Context of Liberation War). Dhaka: The University Press Limited. p. 3.
36 Khan, Op. Cit., p. 25.
37 Bhuyan, Qamrul Hassan. Shestho Somoyer Kotha (Tale of the Best Time). Dkaha: Centre for Bangladesh Liberation War Studies, 2014. p. 73.
38 Uddin, Op. Cit., p. 127.
39 Safiullah, Op. Cit. pp. 20-21.
40 Ibid., p. 23.

secret meetings regularly and they were intensifying vigilance on the Bengali officers'[41]. Army intelligence became very alert at that time. They were keenly observing the movements of the Bengali soldiers and kept them under constant surveillances in the cantonments in East Pakistan. Various measures were taken to establish full control in the cantonments before 25 March 1971.

As part of the clandestine plan, non-Bengali people of Chattogram received supply of arms and ammunitions secretly through West Pakistani troops. 'With the help of west Pakistani units they also looted shops and houses for arms and ammunitions belonged to Bengali'[42]. Non-Bengalis were persuaded to fight against Bengalis. Besides, 'West Pakistani commandos and Pakistani EPR troops were planted among the Biharies in plain clothes with arms'[43]. Pakistani officers developed an entente with the Biharis living outside the cantonments. These elements were crazy to kill the Bengalis.

Pakistani troops were already engaged in killing Bengali people at different parts of East Pakistan from March 1971. Steps were taken by army to keep the Bengali soldiers blind about the happenings outside to avoid turmoil and mutiny inside army. In a bid, 'radios were withdrawn from Bengali troops and no one was allowed to listen to radios'[44]. Maintaining secrecy of the activities of army was a priority. To avoid any untoward incident Bengali soldiers were withdrawn from sensitive duties in March 1971. 'In some Bengal units the wireless duties were given to the non-Bengali soldiers'[45]. At that time only a few Bengali officers were in East Pakistan holding important appointments in the army. Keeping them in those appointments was highly vulnerable. Hence, Bengali staff officers having nationalistic leaning were being replaced by pro Pakistani Bengali officers.

Faux Initiative for Discussion

The army needed enough time to master its strike force in East Pakistan as the operation for genocide of a nation was a huge and complex affair. The military buildup in East Pakistan could not be completed by mid-March as planned before, therefore 'Yahya Khan arranged a discussion with Sheikh Mujibur Rahman to gain time needed for completion of military buildup'[46]. In the meantime, diplomatic relation with India deteriorated due the hijacking of an Indian aircraft by Kashmiri insurgents. This event had negative effect on the development of military buildup. Army could not complete preparation for military operation in time due to embargo on the movement of Pakistani aircrafts over Indian sky.

On March 15YahyaKhan flew in Dhaka with General Hamid, Lieutenant General Pirzada, Major General Omar, Economic Advisor MM Ahmed and constitutional expert A Brohi.

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41 Ahmad, Op. Cit., p. 140.
42 Safiullah, Op. Cit., p. 58.
43 Chowdhury, Amin Ahmed. 1971 O Amar Shamorik Jibon (1971 and My Military Life). Dhaka: Prothoma Prokashan, 2016. p. 52.
44 Ahmad, Hafiz Uddin. Rokte Bheja Ekattor (Blood Wet Seventy-One). Dhaka: Shahittya Prokash, 2016. p. 10.
45 Uddin, Op. Cit., p. 139.
46 Rahman, Op. Cit., p. 25.

Before meeting with Sheikh Mujib, 'he held a secret conference with senior army officers in Dhaka on 15 March where they had a talk on military action in East Pakistan'[47]. Next day president started discussion with Sheikh Mujib on the question of future constitution and the process of handing over political power to the elected representatives. But 'the talks were only a ploy to assist the troop buildup and airlift from West Pakistan'[48]. The ruling elite of Pakistan comprising some of the senior most bureaucrats and top level generals wanted to buy some time with a view to strengthening their position in East Pakistan by bringing in more men and materials from West Pakistan. Yahya was just buying time on the pretext of dialogue and at the same time playing war game with his generals for effective and successful operation plan which he and his military leaders had worked out with Bhutto in West Pakistan.

Bengali Sympathizers Removed

To execute the operational plan of wholesale killing Pakistan Army needed robust commanders in the field. In general, the West Pakistanis and Punjabis in particular had severe hatred for Bengalis. Yet there were few West Pakistanis who could not accept the brutal plan for killing people of East Pakistan. Those who deemed not in favor of military action were removed from their appointments. Accordingly 'Governor of East Pakistan Admiral Ahsan and Martial Law Administrator Lieutenant General Shahabzada Yaqub Khan was removed from his appointment'[49] as he refused to use force to suppress the aspiration of Bengalis. Sober commanders, in favor of political efforts to solve the crisis evolved from the interest of politico-military coterie were considered weak and unfit. Admiral SM Ahsan was known for sympathizing and maintaining a close liaison with Bengali leaders. 'His growing popularity with Bengalis was a matter of concern for Yahya and junta. He was in favor of political solution to the crisis. He was relieved of his duties'[50]. Air commodore MZ Masud was the Base Commander of Dhaka. He gave 'a presentation to General Yahya and others on 16 March 1971 concluding that military action was not the proper solution to the crisis which had been earlier approved by C in C, Pakistan Air Force, Air Marshal A. Rahim Khan'[51]. Such proposal of MZ Masud infuriated the authority. Masud was removed, court martialed and dismissed from service.

After the removal of Admiral Ahsan and General Yaqub from East Pakistan, Lieutenant General Tikka Khan and Lieutenant General AKK Niazi became the choice of Yahya Khan. 'Tikka Khan was a cruel general. He was chosen to be sent to East Pakistan to suppress the movement of Bengalis'[52]. Tikka was commissioned for his muscle and not for his intellectual merit. That is why 'Tikka wanted to win over the Bengalis by force and not by the love of heart'[53]. Tikka Khan, new Governor and Martial Law Administrator came to East Pakistan on 7

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47 Chowdhury, Amin Ahmed. 1971 O Amar Shamorik Jibon (1971 and my Military Life). Dhaka: Prothoma Prokashan, 2016. p. 78.
48 Khan, Op. Cit. p. 30.
49 Hossain, Sardar Mahmud. Ekattorer Bangladesh (Bangladesh of Seventy-One). Dhaka: Anindya Prokash, 2013. p. 59.
50 Safiullah, Op. Cit., p. 19.
51 Hossain, Op. Cit., p. 33.
52 Hossain, Sardar Mahmud. Ekattorer Bangladesh (Bangladesh of Seventy-One). Dhaka: Anindya Prokash, 2013. p. 50.
53 Wahab, Op. Cit., p p. 91-92.

March 1971. He assured Yahya Khan that he would silence the Bengalis within only 48 hours. Assuming the command, he appreciated the situation of East Pakistan and demanded additional force to crush the Bengalis.

Pakistani army officers 'who were against the use of military forces as a means to solve political crisis were posted out from East Pakistan'[54]. In their place anti-Bengali officers were posted. Only Vice Admiral Ahsan and Lieutenant General Yaqub Khan expressed their inability to carry out genocide in East Pakistan. 'But sane people had no place at the upper echelon of the government at that time. Consequently both of the officers were removed from their post'[55].

Operation Searchlight- Drafting and Approval

While President Yahya Khan and the Chief of Army Staff General Hamid along with other senior generals were in East Pakistan from 15 March 1971, the General Officer Commanding of 14 Division Major General Khadim Hussain was insisting Tikka Khan to give him a contingency plan so that he could get ready to face any eventualities. Accordingly, Tikka Khan talked to the president and confirmed his approval for a military operation. Then he extended signal to Major General Khadim Hussain to take necessary preparation. Two Major Generals, Rao Farman Ali and Khadim Hussain drafted the plan of Operation Searchlight on 18 March 1971 in the office of 14 Division Headquarters, Dhaka. The aim of the plan was 'to overthrow Sheikh Mujibur Raman's *de facto* rule and reestablish Pakistan Government's authority by applying brute military force and killing millions of unarmed people'[56]. Pakistan Army maintained all secrecy so that no Bengali officer knew anything about their plan. Even the Aide De Camp, a Bengali Captain of General Khadim was kept busy somewhere else on that particular day. On 20 March at Flag Staff House, this plan was showed to Lieutenant General Tikka Khan and General Hamid Khan. Both of them approved the plan with little change.

Steps before Execution of the Operation

To execute the operation without much resistance from Bengali soldiers and mass people, the Pakistan authority needed to create a favorable condition. They were aware that there were five Bengal Regiments located in East Pakistan. Most of the soldiers of these battalions were charged with Bengali nationalistic feelings and they could turn against them anytime. Hence, army authority had to devise subtle plans to weaken Bengali troops. As a practical step, Bengali soldiers were deployed on duties without arms. Besides, 'many of the Bengali officers were removed from important appointments'[57]. Commanding Officer of 2 East Bengal Lieutenant Colonel Masudul Hasan was removed from command on 23 March as he violated the command of Brigade Commander of 57 Brigade, Brigadier Jahanzeb Arbab, who ordered him to fire on Bengali crowed on 19 March at Joydebpur. Major Khaled Mosharrof was the Brigade Major of 57 Brigade located

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54 Imam, Op. Cit., p. 53
55 Islam, Rafiqul, A Tale of Millions: Bangladesh Liberation War 1971. Dhaka: Ananya, 2017. p. 72.
56 Wahab, Op. Cit., p. 112.
57 Khandakar, Op. Cit., p. 33.

at Dhaka. He was posted out on 19 March and ordered to join 4 East Bengal Regiment garrisoned at Cumilla. 'Lieutenant Colonel Mostaque Ahmed, another Bengali officer, would be commanding Officer of 9 East Bengal was killed in the officers' mess at Dhaka Cantonment'[58]. Many of the Bengali officers were posted out from East Pakistan to West Pakistan before the operation started.

Measures Taken for East Pakistan Rifles

Bengalis in Pakistan statecraft had to face dire discrimination everywhere[59]. As in army in East Pakistan Rifles (EPR), there were also disparities between Bengalis and Pakistanis in the fields of recruitment, promotion and privileges. 80% of the EPR was made up of Bengalis and 20% was non-Bengali. But surprisingly '90% of the officers in EPR were West Pakistani. These officers looked after the interest only of the West Pakistani soldiers. Bengali soldiers were deprived of most facilities and privileges. Over the years such treatment made Bengali soldiers hostile toward West Pakistan'[60]. EPR was a formidable paramilitary force, a headache for West Pakistan. In 1971, a large number of EPR troops were stationed at Peelkhana, Dhaka. Such a concentration right at Dhaka was a threat for Pakistan Army. Hence, 22 Baluch regiment was airlifted from West Pakistan and kept at EPR Headquarters in Dhaka for some ulterior motives. To avoid suspicion 22 Baluch Regiment reconnoitered the important areas at Peelkhana in civil dress on 25 March 1971. Bengali EPR troops deployed outside Peelkhana were brought back on 25 March 1971 on the plea that a settlement had been arrived at and there was no need for internal security by EPR troops. The EPR troops were asked to deposit arms in the armory. 'By dusk that day all EPR troops deposited their arms in the kote while 22 Baluch Regiment soldiers quietly took over the EPR signal communication centre. Troops of 22 Baluch started manning the gates and no one was allowed either to enter or to leave Peelkhana'[60]. Besides, in EPR non-Bengalis were posted in important appointments and many Bengali officers were posted out to West Pakistan. In many places Bengali elements were brought to sector headquarters from Border Outposts (BOP) so that there could have better control and surveillance on them. Heavy weapons were withdrawn from the battalions and BOPs and taken to sector headquarters.

Events in Chattogram

Chattogram was a serious concern for Pakistan Army. Chattogram area was under 53 Infantry Brigade located at Cumilla Cantonment. The presence of West Pakistani soldiers in Chattogram was less comparing to Bengali soldiers. In Chattogram there were two military installations. The 8 East Bengal Regiment located at Sholashahar, outside Chattogram Cantonment and the East Bengal Regimental Centre (EBRC). Majority soldiers of these two organizations were Bengalis. Apart from that there was 20 Baluch Regiment in EBRC commanded by Pakistani officer Lieutenant Colonel Fatemi. Pakistani Army had deliberate plan

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58 Bhuyan, Qamrul Hassan. Ekattorer Dinpanji (Diary of Seventy-One). Dkaha: Centre for Bangladesh Liberation War Studies, 2017. p. 85.

59 Islam, Rafiqul, A Tale of Millions: Bangladesh Liberation War 1971. Dhaka: Ananya, 2017. p. 82.

60 Ibid., p. 117.

for these two Bengali dominated organizations so that Bengali soldiers in Chattogram area could be eliminated without resistance.

a. ***East Bengal Regimental Centre (EBRC).***

(1) EBRC is a centre for training of the recruits of the East Bengal Regiment. In 1971 there were about 2000 Bengali recruits undergoing basic military training in EBRC Brigadier MR Majumder, a Bengali officer imbibed with Bengali nationalistic zeal was the center commandant of EBRC and Zonal Martial Law Administrator of Chattogram. MV Swat, a Pakistani ship carrying huge amount of weapons and ammunition anchored in Chattogram port. Brigadier Majumder was given the task to unload the ship immediately as these weapons and ammunitions were badly needed for the operation. 'Lieutenant General Tikka Khan and Major General Mitha put tremendous pressure on Brigadier Majumder to unload the ship'[61]. Pakistan Army placed tanks in front of the Officers' Mess and the residence of Brigadier Majumder.

(2) 20 Baluch regiment which was engaged in killing of recruits and troops in EBRC would have left for West Pakistan 'but was delayed by design by the authority'[62]. The Chief of Army Staff along with Major General Khodadad Khan, Major General Mitha, Major General Khadim Hussain and Brigadier Ansari 'visited Chattogram Cantonment and 8 East Bengal on 21 March 1971'[63]. General Hamid secretly held a meeting with Commanding Officer of 20 Baluch Regiment but the senior most Bengali officer in Chattogram Brigadier Majumder was not allowed to be present in that secret meeting.

(3) Pressure exerted on M R Majumder by 'Lieutenant General Tikka Khan, General Abdul Hamid and Major General Mitha to unload the ship with immediate effect'[64]. While failed, Pakistan Army also took efforts to unload the ship with the help of naval troops. On 24 March, Major General Khadimand Major General Mitha arrived at Chattogram Cantonment in a helicopter. General Khadim held a secret meeting with Commanding Officer of 20 Baluch Regiment while Mitha kept Brigadier Majumder engaged in vague discussion. They handed over the order of Operation Searchlight to the Commanding Officer of 20 Baluch Regiment Lieutenant Colonel Fatemi. They took Majumder along with them to Dhaka and later he was removed from the command. As part of the plan, after the removal of Majumder, EBRC recruits were sent on duty without weapons by Pakistani Lieutenant Colonel Osmani. All rifles of Bengali soldiers of EBRC were seized and put into armory in the evening of 25 March 1971.

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61 Chowdhury, Amin Ahmed. 1971 O Amar Shamorik Jibon (1971 and My Military Life). Dhaka: Prothoma Prokashan, 2016. pp. 18, 68.

62 Ali, Op. Cit., p. 31.

63 Ahmad, Op. Cit., pp. 141-142.

64 ibid

(4) Colonel Shigri, Deputy Commandant of EBRC was made the new commandant of EBRC after the removal of Brigadier Majumder. Anti-Bengali Pakistani officer 'Lieutenant Colonel Janjua was posted as Commanding Officer of a newly raised Bengal Regiment, 8 East Bengal Regiment, located at Chattogram'[65]. All the keys of the vehicles of EBRC were closed on 24 March by Major Beg, a Pakistani officer. Brigadier Ansari, Station Commander of Dhaka was given the command of Zonal Martial Law Administrator, Chattogram. His main task was to unload MV Swat as quick as possible. Ansari started unloading the ship on 24 March, the day he got command.

Steps Taken for the East Bengal Regiment

Up to 1971 there were total eight East Bengal battalions raised in Pakistan Army. Out of the eight units only five were there in East Pakistan. Among those East Bengal battalions only two were commanded by Bengali officer and the rest three were under West Pakistani officers[66]. Besides, 1 East Bengal Regiment and 8 East Bengal Regiments were on order to move to West Pakistan. Fearing the gathering force, the battalions of the East Bengal Regiment were never allowed to remain together as a matter of strategy. 'It was with this motive that the newly raised 8th Battalion was earmarked to soil to West Pakistan'[67].

Bengali forces available under the Eastern Command did not exceed 'six thousand officers and troops'[68]. Besides, there were about 15000 EPR troops and about 20000 police in East Pakistan. In EPR and Police most of them were Bengalis. Apart from that there were few thousands of ex-servicemen, Ansars and Mujahids. These were indeed a mighty force. 'Initially the Army crackdown was aimed at the troops' elimination of the Bengali first line, EPR and Police Force'[69]. With a view to reducing the hitting power of Bengali battalions they were split into companies and these companies were often beyond battalion's communication network. So they would not be able to revolt and fight together. Pakistani design was to disarm the Bengali troops first and then attack them for final elimination. Bengal regiments were ordered to deploy at various places in aid to civil

a. ***The 1 East Bengal Regiment***

In 1971 the 1 East Bengal Regiment was at Jessore. Pakistan Army planned to keep this battalion outside the cantonment. Hence it was deployed at Chugacha from January 1971. As the battalion was outside the cantonment so it had little scope to know about the happenings of the cantonment. The unit was brought back to the cantonment on 29 March 1971. Brigade Commander of 107 Brigade Brigadier Durrani ordered the battalion to deposit all weapons to the armory. 'In the meantime, 25Baluch Regiment and 22 FF

65 Islam, Op. Cit., p. 12.
66 ibid
67 Safiullah, Op. Cit., p. 31.
68 Ibid., p. 31.
69 Ibid., p. 32.

Regiment were deployed around the 1 East Bengal'[70]. Radios from the troops of this battalion were withdrawn by order to deny them any news. 1 East Bengal did not have the full strength. Half of the total troops was 'on pre embarkation leave as the battalion was supposed to move to Shialkoat in June 1971'[71]. Brigade Commander took away the keys of armory of the 1 East Bengal from the Commanding Officer on 30 March. Thus this battalion was disarmed, but the courageous Bengali troops of the battalion broke the armory and took up arms. '25 Baluch Regiment and 22 Frontier Force, two West Pakistan battalions attacked 1 East Bengal on 30 March from three sides'[72]. The 1 East Bengal Regiment revolted instantaneously and after a fierce battle the battalion extricated itself from the Pakistani seize.

b. ***The 2 East Bengal Regiment***

The 2 East Bengal was located at Gazipur near Dhaka. Pakistan Army decided not to keep any Bengali unit near Dhaka. Following a tactical plan, this battalion was deployed outside the cantonment in March 1971. As per plan one company was deployed at Tangail, one company at Mymensingh, one platoon at Rajendrapur Ammunition Factory, rest of the forces were at Rajbari Cantonment, Joydebpur.'Pakistan Army took a drive to disarm the 2 East Bengal on 19 March 1971'[73]. In that scheme, Brigadier Jahanjeb Arbab along with 72 non-Bengali commandos armed with 7.62 LMG went to Joydebpur on 19 March to disarm 2 East Bengal. His efforts failed as 2 East Bengal was ready to face any eventualities. 'Commanding Officer of 2 East Bengal Lieutenant Colonel Masudul Hasan was removed on 23 March as he did not act on the order of Brigadier Arbab who ordered him to fire on the mob on 19 March while he came to Joydebpur with armed soldiers'[74]. After his removal a pro Pakistani officer was appointed as Commanding Officer. The battalion revolted and joined the Liberation War.

c. ***The 3 East Bengal Regiment***

The 3 East Bengal was located at Saidpur Cantonment. A Pakistani officer, Lieutenant Colonel Fazal Karim was the Commanding Officer of this battalion. 26 Frontier Force dug trenches around 3 East Bengal. To minimize the strength of 3 East Bengal, it was divided into small groups and deployed for security duties. Anti-tank weapons of this battalion were given to a Pakistani unit, 26 FF by the Commanding Officer of the unit. One company of this battalion was deployed at Ghraghat-Polashbari axis and one company at Dinajpur. 'All the support weapons and radio sets of 3 East Bengal were deposited to brigade headquarters of 23 Brigade on 17 March'[75]. 26 Frontier Force

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70 Arefin, Op. Cit., p. 6.
71 Ahmad, Hafiz Uddin. Rokte Bheja Ekattor (Blood Wet Seventy-One). Dhaka: Shahittya Prokash, 2016. p. 13.
72 Ibid., p. 20.
73 Rashid, Op. Cit., p. 98.
74 Arefin, Op. Cit., p. 7.
75 Islam, Op. Cit., p. 121.

attacked rear elements of 3 East Bengal on 30 March and 'the unit revolted under Captain Anwar and extricated from the cantonment with heavy casualties[76] and joined the Liberation War.

d. ***The 4 East Bengal Regiment***

53 Infantry Brigade located at Cumilla was commanded by Brigadier Iqbal Shafi, a Pakistani officer. No non-Bengali unit of this brigade was deployed for any security duty outside the cantonment but the 4 East Bengal Regiment. With the plea to stop Indian infiltration and eliminate Naxalites the unit was deployed. The ultimate aim was to keep the battalion scattered and thereby minimize its strength. Two companies were deployed at Brahman aria and one company at Shamshernagar to stop Indian infiltration which was only a trick. 'The objective of Pakistan Army was to bring 4 East Bengal out of the cantonment so that this battalion could be disarmed easily'[77]. Pakistan Army units dug trenches and intensified surveillance around unit area. Sending main body outside Pakistan Army took steps to disarm the rear elements of 4 East Bengal. Non-Bengali units, '3 Commando Battalion, 24 Frontier Force and 53 Field Regiment Artillery deployed heavy weapons around 4 East Bengal Regiment'[78] and attacked the rear of the unit. The battalion revolted on 26 March and joined the Liberation War.

e. ***The 8 East Bengal Regiment***

The 8 East Bengal was raised in 1970. The battalion was under order to move Kharian Cantonment in West Pakistan. In fact 'the advance party with one company had already left and was in Kharian making preparation for arrival of the battalion'[79]. The troops of this battalion all total were approximately under 300 personnel. All weapons and ammunitions were already deposited as it was supposed to move to West Pakistan. '8 East Bengal would have left for West Pakistan much earlier but was delayed by design, by the authority'[80]. Commanding officer, Lieutenant Colonel Janjua, a Pakistani officer engaged this battalion in more games and sports than usual. There were only '12 LMGs and 300 Rifles for training purpose and the arms were not in good condition'[81]. Some of the troops of this battalion were deployed in Chattogram city for security duties. After the removal of Brigadier Majumder a company of this battalion was deployed at Chattogram Port on 24 March to unload MV Swat. The battalion revolted on 25 March 1971 and joined the Liberation War.

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76 History of Bangladesh Army, vol.I (Published by Directorate of Education, Bangladesh Army, 2015), p. 44.
77 Rashid, Op. Cit., p.90
78 Gaffar, H M Abdul. Sritimoy Muktijuddho O Amar Shamorik Jibon (Memorable Liberation War
79 Ali, Op. Cit., p. 3.
80 Ibid., p. 31.
81 Ahmad, Op. Cit., p. 139.

Operation Searchlight

Having completed all preparations, Pakistan Army swooped on the Bengali soldiers and unarmed people on 25 March 1971. The Pakistan Eastern Command at Dhaka was responsible for all operations in East Pakistan. They aimed to launch the operation simultaneously throughout East Pakistan with great cunningness, surprise, deception and speed combined with shock action. 'Yahya, Bhutto and number of senior generals were responsible for the planning and executing the genocide of the Bengalis'[82]. To complete military preparation Pakistan Army needed time. To gain time, they 'designed the plan of holding dialogue so that the preparation for military buildup could be completed'[83]. When Pakistan Army completed preparations it hurriedly pounced on the people of East Pakistan. In the meantime, giving signal for killing of Bengalis, President Yahya Khan left Dhaka secretly on of 25 March in disguise so that nobody knew anything about his departure. The operation started approximately at 2300 hours at night after the safe return of the president.

From 7 March to 26 March they got 17 days' time on account of negotiation. 'During these 17 days they brought in 10-12 infantry battalions by outnumbering the military might of the Bengalis to 3:1'[84]. Major General Rao Farman was responsible for execution of the operation in Dhaka and Major General Khadim was for other parts of East Pakistan. The order of Operation Searchlight was taken to different cantonments on 24 and 25 March 1971. 'Major General Janjua, Major General Abu Bakar Osman Mitha, Major General Nazar Hossain Shah visited Rangpur, Rajshahi, Jessore, Chottogram and Cumilla Cantonment to handover the operation plan to the Pakistani Officers on 25 March 1971'[85] Lieutenant Colonel Zahirul Alam of 3 Commando Battalion was instructed to arrest Sheikh Mujibur Rahman by 'the Chief of Army Staff on 25 March 1971'[86].

As soon as the commanders had received the order they raced against time to give final touches to their secret preparation to attack Bengalis anywhere from that night. At 11 am of 25 March a number of very senior officers flew in army helicopter to Rangpur. 'The Colonel Staff of 14 Division carried a sealed packet. From Rangpur the helicopter flew to other cantonments and finally returned to Dhaka in the evening'[87].

The Battalion Commanders received final order for the operation at 5 pm on 25 March. Arms and ammunitions were issued to the soldiers after receiving the order. 'All soldiers of West Pakistan were assured of looted booties and accelerated promotions as rewards for their ability to kill Bengalis and loot their properties'[88]. Major Bilal of 3 Commando Battalion went to Mujib's

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82 Islam, Rafiqul, A Tale of Millions: Bangladesh Liberation War 1971. Dhaka: Ananya, 2017. p. 68.
83 Uddin, Op. Cit., p. 126.
84 Ahmad, Op. Cit., p. 138.
85 Bhuyan, Qamrul Hassan. Ekattorer Dinponji. Dkaha: Centre for Bangladesh Liberation War Studies, 2017. p. 79.
86 Islam, Op. Cit., p. 44.
87 Ibid. P. 116.
88 Ibid, p. 136.

residence with one tank, one APC and one truck load troops and arrested Bangabandhu at around 0100 hours without resistance. 'Soldiers were told not to bother about age, sex or religion of the Bengalis they killed since every Bengali was their enemy'[89]. On that fateful night Pakistan Army resorted to killing, burning, looting and raping unprecedented in human history. Zulfikar Ali Bhutto left Hotel Intercontinental at 0830 on 26 March for onward move to West Pakistan leaving East Pakistan in the inferno of genocidal killing.

Conclusion

President Yahya Khan held the general election of Pakistan in 1970. He was sanguine that Awami League would not get absolute majority in the election. But the result of the election came as a rude shock to Yahya Khan as Awami League won majority seats in the National Assembly. From thence Yahya along with his coterie was hatching plan to perpetuate power applying every means. Scrapping the negotiations with Sheikh Mujib, Yahya Khan sneaked out of Dhaka secretly on 25 March 1971. Before departure he passed down order to Tikka Khan to carry out Operation Searchlight, a heinous massacre of innocent people of East Pakistan. Thus the beginning of the end of united Pakistan started on 25 March 1971.

Operation Searchlight executed on the dreadful night of 25 March was not a sudden action; rather it was the final phase of a deliberate plan. Pakistan army started taking immediate preparation for this operation from January 1971. An unholy trio among President Yahya Khan, Chief of Army Staff General Hamid and Zulfikar Ali Bhutto had already been formed in Larkana where they hatched a conspiracy not to hand over power to Awami League.

The army supported by navy and air force finally stroke on 25 March after the safe departure Yahya Khan. One of the missions of Operation Searchlight was to disarm Bengali personnel of Army, Navy, Air force, Police, Ansar and EPR who were serving in East Pakistan with a view to destroying the combat elements of Bengali nation. To emaciate combat efficiency, the East Bengal battalions were split into small groups and deployed outside the cantonments. They also planned to kill political leaders and intellectuals with a view to keeping Bengali nation under permanent subjugation. For successful execution of the operation, Pakistan Army took deliberate preparation and brought new troops and sophisticated weapons from West Pakistan. They also appointed anti-Bengali officers removing the Bengali sympathizers. The operation was supposed to start at 1 am of 26 March, but the savage instinct of aggressors could not be controlled for long, so they pounced on people much before the planned hour.

Operation Searchlight was simply an orchestrated genocide and a destruction that was carried out from racial hatred. In fact, the operation of 25 March 1971 was the final phase of their preparation. Military junta was convinced by the idea that a sudden crackdown on the Bengalis would silence them forever. But the desire for freedom and fire of revenge could not be extinguished. Pakistan Army failed to realize that it was a fight for existence, a war for liberation,

[89] Ibid, p. 142.

and a struggle for freedom. Fearless nation turned impregnable and resisted enemy with its every effort. At the end of a nine-month war Pakistan Army surrendered to the people's army of Bangladesh and Indian Forces on 16 December 1971 that heralded the victory of Bangladesh and fetched independence for this nation ending Pakistani domination forever.

Major Gazi Mohammed Tauhiduzzaman, AEC was commissioned on 03 December 1998 in the Corps of Education. He served as instructor in Bangladesh Military Academy and Staff Officer in Brigade and Formation. He served in the United Nations Mission in Liberia. He also served as Principal in President Professor Dr. lajuddin Ahmed Residential Model School and College, Munshigonj. At present, he is serving as General Staff Officer Grade-2 in Education Directorate, Army Headquarters.

APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN THE SYSTEMS OF BANGLADESH ARMED FORCES

Major Tahmina Haque Munia, Sigs

Abstract

The applications of Artificial Intelligence (AI) by Bangladesh Armed Forces (BAF) can turn their existing conventional systems into highly advanced combat systems, especially in areas such as warfare platforms, cybersecurity, logistics and transportation, target recognition, battlefield healthcare, combat simulation and training, threat monitoring and situational awareness and data information processing. AI, with its improvised self-control, self-regulation, self-actuation and inherent computing abilities, can not only handle the larger volumes of defense data faster and efficiently but also has the potentials to increase the knowledge, perception, insight, planning, performance and communication efficiencies of the workforce in general. The article assesses the prospects and possibilities of introducing AI in the existing systems of BAF to aptly improvise the functionalities of the systems, making them more capable, dynamic, secured, effective, reliable and accurate. Keeping the global scenario of how the Defense Forces of the world are embedding AI into their combat systems, the paper tries to determine the current and future strengths of BAF once AI is properly adapted in the systems. The paper also tries to determine the limitations and challenges such as budget constraint, resources constraint and potential challenges in AI embedded work environment in BAF operational systems.

Keywords: Artificial Intelligence, Bangladesh Armed Forces, potential, operational, planning.

Introduction

"AI is probably" according to Sundar Pichai, the CEO of Google, 'the most important thing humanity has ever worked on."[1] He thinks AI is 'something more profound than electricity or fire.'[2] Though notable scientist Professor Stephen Hawking was apprehensive about AI fearing that it "could wipe out mankind" from the earth and considered AI "worst event in the history of our civilization"[3] and Tesla boss Elon Musk finds "AI is more dangerous than North Korea"[4] and Sam Altman, the chairman of Y Combinator and co-chairman of Open AI, likens AI

1 Sundar Pichai, Davos, 2018; Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, talks with Google Chief Executive on impact of artificial intelligence

2 Sundar Pichai, Davos, 2018; Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, talks with Google Chief Executive on impact of artificial intelligence

3 Chung, Emily (13 January 2015). "AI must turn focus to safety, Stephen Hawking and other researchers say". Canadian Broadcasting Corporation. Retrieved 24 April 2015.

4 Griffin, Andrew (12 January 2015). "Stephen Hawking, Elon Musk and others call for research to avoid dangers of artificial intelligence". The Independent. Retrieved 24 April 2015.

to nuclear fission, Pichai is rather optimistic about its potential and says that the technology could eliminate many of the constraints we now face, helping us for example to make "clean, cheap, reliable energy"[5] a reality. He also 'bets big on AI in healthcare'[6] and in education.

A similar position is maintained by Mark Zuckerberg who says Musk's AI rhetoric is "pretty irresponsible." Like Pichai, the Facebook CEO too is optimistic and says," AI is going to unlock a huge amount of positive things, whether that's helping to identify and cure diseases, to help cars drive more safely, to help keep our communities safe."[7]

In fact, if the downsides of the technology could be harnessed like the ways it has been done with many other technologies, AI could engender unprecedented amount of benefits to the betterment of human civilization. "AI is a kind of an equalizer"[8] and it has the potential to empower everyone, as Pichai says, "with the same ability."[9]

Identification of the Problem

The key research problem of the statement is to assess the catalytic prospects and possibilities of AI in certain areas of Bangladesh Armed Forces such as warfare platforms, cybersecurity, logistics and transportation, target recognition, battlefield healthcare, combat simulation and training, threat monitoring, situational awareness and data information processing.

Significance of the problem

The increasing dependence on AI by the Defense Forces around the world makes it essential for BAF to adapt to similar measures to remain technologically compatible, logistically automated, strategically well-equipped and systematically secured.

The prospects of application of AI are immense. AI can keep BAF data secured, facilitate staff training, strengthen crisis management preparedness, create exercises and battlefield simulation, trouble-shoot obstacles remotely, rejuvenate moral spirit of the workforce, evaluate preparation, after-action review, doctrine and equipment, offer corporate training, make warfare engagement resilient, minimize human losses, curtail expensive budgets, turn the core systems more effective and pose a stronger threat of invincibility to the enemy states.

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5 Sundar Pichai, Davos, 2018; Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, talks with Google Chief Executive on impact of artificial intelligence

6 The Economic Times, May 09, 2018. Google I/O 2018: Sundar Pichai bets big on AI in healthcare, Android P; JOMO, Shush make headlines

7 Viva Technology conference, Paris,2018. www.businessinsider.com. Retrieved 24 May 2018

8 Sundar Pichai, Davos, 2018; Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, talks with Google Chief Executive on impact of artificial intelligence

9 Sundar Pichai, Davos, 2018; Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, talks with Google Chief Executive on impact of artificial intelligence

The Objectives of the Study

The paper aims at achieving the following objectives:

- To discuss, assess and analyze the AI -compatibility of the current systems.
- To determine the policies and strategies for implementing AI in the military systems.
- To locate the areas for the applications of AI in the Defense systems.
- To evaluate the existing budget, resources and expertise for AI in the systems.

Literature Review

Bangladesh aspires to be digitally transformed as a nation. To have an AI framework for public, private and military forces is part of the requirement to be digitally transformed in the 21st century. The government is aware that AI can generate speed, efficiency, and accuracy and improvise services in the armed forces, transportation, education, agriculture, healthcare, environment, trading, banking, surveillance, media and in many other areas as well.

Bangladesh Government's efforts to develop AI framework concentrate on ensuring the best interest of humanity. Strategy and policies for AI, which basically aim at maximizing the benefits of AI and minimizing its potential costs and risks, are being formulated across the globe. For example, the EU has very recently unveiled ethical guidelines for AI, which emphasize that AI systems should be accountable, explainable, and unbiased.

Applications of AI in military warfare systems are getting serious attention by the defense forces all over the world. In Project Maven, Pentagon employed a team of employees from Google in 2018 to design AI image recognition software for military drones. There are 30 countries that have already created or are in the last phase of developing AI framework, from generic as well as application-wise perspective.

The report titled "Artificial Intelligence and Life in 2030" by the panels of AI experts from Stamford University, California focuses on the evolution of AI, its exploration programming, related algorithms, field of uses and future time line. The impacts of AI, having studied its influence on people, their communities and society; especially in areas such as transportation, health care, education, public safety and security, employment and work place, home services robots and entertainments, have necessitated the researchers to set policy guidelines emphasized on removal of inequalities, ethical use, biased data input, system mistakes with shortcomings, compatibility with human tasks and privacy concerns. Finally, the panel suggested 'strong regulation and compliance' which must be balanced with 'innovation and privacy protections' (Stone, 2016). The report has emphasized on strict policy directives for the application of AI which must be humane, fair and equitable. No application strategies for military hardware or other technologies has been specified for Armed Forces.

Having studied the ideas and challenges mentioned in "Artificial Intelligence and Autonomy: Opportunities and Challenge" by Andrew Ilachinski, the use of Lethal Autonomous Weapon System (LAWS), though UN Convention on 'Conventional Weapon in 2017' could

potentially impose ban on LAWS, might take as the forecast goes, another 30 years to reach a stage for military wings to be fully AI weaponized as now we are at deep learning stage only. The existing unmanned system, according to the writer, requires a 4- stage transition plan to be taken to the peak to fully autonomous system. This four-stage-transition plan could be assessed and evaluated by BAF as a part of their efforts to becoming AI friendly military systems.

Methodology

The sources of collecting the primary data include interviews, surveys, meetings and consultations with the AI experts; whereas books, research journals, magazines, military web portals, etc. remain the sources of the secondary data.

GROWING UP WITH ARTIFICIAL INTELLIGENCE

The Approach

For most of us today the potentials of AI are unknown and therefore scary. To grow with AI, we need to change our approach towards the technology first. 'That journey matters'[10] as it aims at making AI simplified and accessible to the common people. "One of the most exciting things we all can do is demystify machine learning and AI. It's important for this to be accessible by all people."[11]

The approach to integrate AI with the military systems preferably needs to be holistic too, creating a collaborative hub that joins all the wings of BAF and making the process of sharing information, resources, data, assets, manpower, weapons, technologies, services and other logistics very agile, dynamic, and cost effective. However, the process by default requires that each division should have its own AI unit to coordinate and share. Even if the country opts for not to weaponize AI, with its immense potentials, it can really revolutionize service sectors. AI is 'already helping diagnose diseases'.[12] The recent use of robots in the hospitals in Wuhan and around the globe has saved doctors and other medical professions from being exposed to COVID-19 virus and enabled them to fight the pandemic remaining in the upfront. Wuhan city counselors have also used mobile run application to detect the movements of the COVID-19 patients and isolate the people with whom they came into contact accordingly and it has helped minimize the spread of the virus. AI has the potentials to 'run self-driving cars'[13] and eliminate deaths owing to road accidents and 'that is going to be just a dramatic improvement'.[14] ″In the next five to ten years, AI is going to deliver so many improvements in the quality of our lives."[15]

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10 Google CEO Sundar Pichai delivers the keynote address at Google I/O 2017 on May 17, 2017 in Mountain View, CA.
11 Google CEO Sundar Pichai delivers the keynote address at Google I/O 2017 on May 17, 2017 in Mountain View, CA.
12 Mark Zuckerberg, CEO, FACEBOOK, CNBC. COM, published Mon, Jul 24 20171:05 PM EDT Updated Mon, Jul 24 20177:04 PM EDT
13 Mark Zuckerberg, CEO, FACEBOOK, CNBC. COM, published Mon, Jul 24 20171:05 PM EDT Updated Mon, Jul 24 20177:04 PM EDT
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The Plan

The plan has to be comprehensive with specific goals to achieve within certain time frame (say for example till 2050), keeping the renowned institutions and universities of the country as backward linkages to provide the necessary expertise and the civilian researchers, academicians and AI specialists as buffers to fill up the void till BAF have their own team of expertise ready.

BD government has already adapted strategy to modernize the digital services and e-Government using AI and Big data (2023) including e-Welfare, e-Healthcare, e-Education, ITS, e-Job, e-Patent, e-Permit, e-Trade, DMS, e-Environment and e-Investment etc. Here AI applications for government and industry are based on researches, experiments and investments, covering a wide range of areas from amplifying productivity, modernizing defense forces in consultation, training, tax collection, creating skilled workforces and adequate resources to tackling complex problems of modern time.

To plan our communication system, 'we need to focus on our capabilities',[16] the objectives we need to achieve and the potential adversaries. For a credible operational plan, 'communication among all the Armed Forces Divisions has to be given priority'.[17] Using 'Optical Fiber network will be a secured means as it can ensure security of terminal equipment.'[18] In fact, BAF should plan 'to have their own optical fiber backbone with sufficient redundancy option.'[19] Each division must focus on upskilling the existing workforce to cater to the need to introduce AI in their existing systems. 'A set of plausible and perceptive Research & Development strategy are needed to be formulated, taking the keen consent of all the users and developers. This shared responsibility with other stakeholders essentially need to be focused on the social, economic, security and services sectors.'[20]

Keeping the 4 stages of transition as mentioned by *Andrew Ilachinski* in his book titled "Artificial Intelligence and Autonomy: Opportunities and Challenge" in the background, the following table, as suggested by Lieutenant Colonel Nizam Uddin Ahmed in his research paper, entitled "Emergence of Artificial Intelligence in Future Warfare: Preparedness of Bangladesh Armed Forces, published in AFWC-2018, shows a tentative time frame for exploration and applications of different AI subset technologies in the existing military systems.

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16 Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

17 Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

18 Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

19 Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

20 Air Commodore Kazi Mazharul Islam, BSP, BUP, ndc, acsc, psc (12 Sep, 2018), Director, Directorate of Air Operations, Air Headquarters, Dhaka Cantonment, Interviewed at 1105 hours in Directorate of Air Ops, Air HQ, Dhaka Cantonment

Table-1: A tentative time frame for exploration and applications of different AI subset technologies in the existing military systems.

AI Subset Technology	Year of Exploration	Military Applications	Exploration Year
Machine Language	2023	Autonomous Deep Learning	2028
Deep Learning	2027	Human Machine Collaboration	2035
Reinforced Learning	2025	Assisted Human Operation	2025
Computer Vision	2022	Advanced Human Machine Combat Teaming	2032
Natural Language Processing	2021	Network Enabled Semi-Autonomous Weapon	2030
Crowd Sourcing	2022	Machine Learning Approach to Targeting	2024
Collaborative System	2027	Battlefield Singularity	2028
Internet of Things	2028	Intelligent zed Warfare	2034
Robotics	2024	Intelligent Unmanned System	2027
Swarming	2025	AI Technique for Network Centric Operation	2030
		Robots for Surveillance and Reconnaissance	2030
		Unmanned Ground Vehicle	2023
		Multi Agent Robotics Framework	2028
		Image Interpretation	2026

Creating a Holistic Platform for the Application of AI

Uber, Airbnb, Amazon, Apple, PayPal, Google, Alibaba Group- all these companies are market leaders today. The secret of their success lies in building holistic platform models. 'Whether platforms are connecting sellers and buyers, hosts and visitors, or drivers with people who need a ride,'[21] the system being digitally holistic in security, regulation, consumer trust, 'provides a successful platform of business'.[22]

A holistic AI platform for Bangladesh Army, Bangladesh Navy and Bangladesh Air Force, Boarder Guard Bangladesh, Bangladesh National Cadet Corps and Bangladesh Coast Guard can really make the military systems of the country equally compatible with those forces

[21] Geoffrey Parker, Marshall W. Van Alstyne, Sangeet Paul Choudary, (2017), Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You; W. W. Norton & Company; 1st Edition

[22] Geoffrey Parker, Marshall W. Van Alstyne, Sangeet Paul Choudary, (2017), Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You; W. W. Norton & Company; 1st Edition

of the technologically advanced nations. With its immense potentials to problem solving, learning, reasoning, social intelligence and general intelligence, AI can bring solutions to the most complicated challenges that these institutions face in their everyday operations. The gainful areas include:

(a) Autonomous and intelligent unmanned systems.
(b) Command, offense and defense information warfare.
(c) War gaming, training, and simulation and
(d) AI-enabled information processing, intelligence analysis, and data analysis.

'System automation need to be done immediately in Air Defense Operations Center (ADOC). At present, it is in rudimentary level. Attitude of three services need to be brought in same platform to develop a unified effort for AI development program.'[23]

'An autonomous council should be made for software development, hardware acquisition and transfer of technology from foreign countries for AI Research & Development lab.'[24] Supervised learning needs to be mastered before reaching AI stage. AI compatible ecology needs to be planned for mid and long term ranging from 7 and 15 years respectively. The future development of AI R&D should focus on development pattern of AI applications in the future time line. In this case, Forrester prediction on 2017 could be a guiding principle for Bangladesh Armed Forces. A digitally holistic system or a 'collaborative design is essential to ensure that we build benevolent AI systems."[25]

Machine Learning

Understanding the techniques of 'ongoing human-computer interaction (HCI) research and practical applications'[26] is 'very useful', as with reliable data and precise objectives, machine learning can take care of many problems that these organizations face every day. This subset of AI can utilize the data, find patterns and anomalies in the data and raise alerts when there are occasions to be worried. Robots can enhance the production output and machine intelligence can be trusted.

'Human-machine collaboration should be prime focus in the development of AI technology where both will complement each other's job without replacing each other.'[27] 'The transition from Artificial Narrow Intelligence (ANI) to Artificial General Intelligence (AGI) will

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[23] Air Commodore Kazi Mazharul Islam, BSP, BUP, ndc, acsc, psc (12 Sep, 2018), Director, Directorate of Air Operations, Air Headquarters, Dhaka Cantonment, Interviewed at 1105 hours in Directorate of Air Ops, Air HQ, Dhaka Cantonment

[24] Professor Dr. Md. Mostofa Akbar, Head of Department, Computer Science & Civil Engineering Department, Bangladesh University of Engineering & Technology (BUET) (10 Sep, 2018), Interviewed at 1415 hours.

[25] Mariya Yao, Adelyn Zhou, Marlene Jia, (2018), Applied Artificial Intelligence: A Handbook for Business Leaders, TOPBOTS

[26] Miroslav Kubat; An Introduction to Machine Learning; 2nd Edition; Springer; Softcover reprint of the original 2nd ed. 2017 edition (August 17, 2018)

[27] Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

need infrastructural support, Research & Development (R&D) capacity, financial allotment, transitional perspective plan, knowledge level and overall psyche and attitude towards working with machines'[28] The roadmap for transition from ANI to AGI in the context of BAF may be compartmentalized in three phases; namely phase-1 or foundation of AI application extending not beyond the year 2030, phase-2 or service integration, extending not beyond 2040 and Phase-3 or modernization, extending not beyond 2050. However, the current researchers in the area suggest the year 2030 for Phase-3, but considering the data found in the survey for this paper, expecting fully functional AI friendly holistic operational systems for BAF by 2030 appears over ambitious.

Automation

Automation helps to save time and maximize the use of the resources. To transform the manual process into an automated system, an AI platform seconds none. It can set the human staff free for work that requires human touch. However, it is crucial to understand that the AI platform an institution opts for its use must be user friendly. With the right AI platform, jobs in BAF such as invoicing, job application sorting, budgeting, marketing, vehicle allocations, purchase and stock inventory, schedule preparations, etc. can be handled more conveniently than ever before. 'There has to be a shift in paradigm, changing the attitude and philosophy of the officers and the decision makers towards accepting AI technology. System Automation should be done immediately.'[29] 'The AI development program must be monitored by the cell of credible people of three services with right spirit.'[30]

Natural Language Processing and Understanding

Natural language processing and natural language understanding play a vital role in optimizing the benefits of Al platforms. The reasons are not difficult to comprehend. To comply with it, firstly, the existing Bangladesh Armed Forces systems need to have support for full speech recognition and that the systems must interact fully once the language is recognized. Whatever the messages are recorded, even if they are in audio format, they must be transformed into texts and AI platform should use the available data to interpret the multiple languages and dialects correctly to deliver benefits.

Budget Allocation

'Sufficient fund to conduct Research & Development (R&D), dedicated research work, allotting more credit hours for AI in undergraduate level, harnessing robotics & AI club activities

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[28] Brigadier General Iqbal Ahmed, ndc, afwc, psc (11 Sep, 2018), Director, Information & Technology Directorate, Army Headquarters, Dhaka Cantonment, Interviewed at 1115 hours in IT Directorate, AHQ, Dhaka Cantonment.

[29] Major General Abul Khair, ndc, P Engg Commandant, (1 Aug, 2018), Military Institute of Science & Technology (MIST), Interviewed at 1200 hours at Commandant Office, MIST, Mirpur Cantonment

[30] Air Commodore Kazi Mazharul Islam, BSP, BUP, ndc, acsc, psc (12 Sep, 2018), Director, Directorate of Air Operations, Air Headquarters, Dhaka Cantonment, Interviewed at 1105 hours in Directorate of Air Ops, Air HQ, Dhaka Cantonment

will help removing the non-confident gesture of the AI engineers.'[31] The expenditure trend of Bangladesh Army in IT sector is a case here in point. The inadequate and scanty amount of yearly budget, though it has increased significantly over the past few years, logically denotes that the organizations need to toil a little harder to be fully equipped with the necessary preparedness for the applications of AI in their systems. The pie graph below shows the fund allocated in IT sector of Bangladesh Army over the last 9 years.

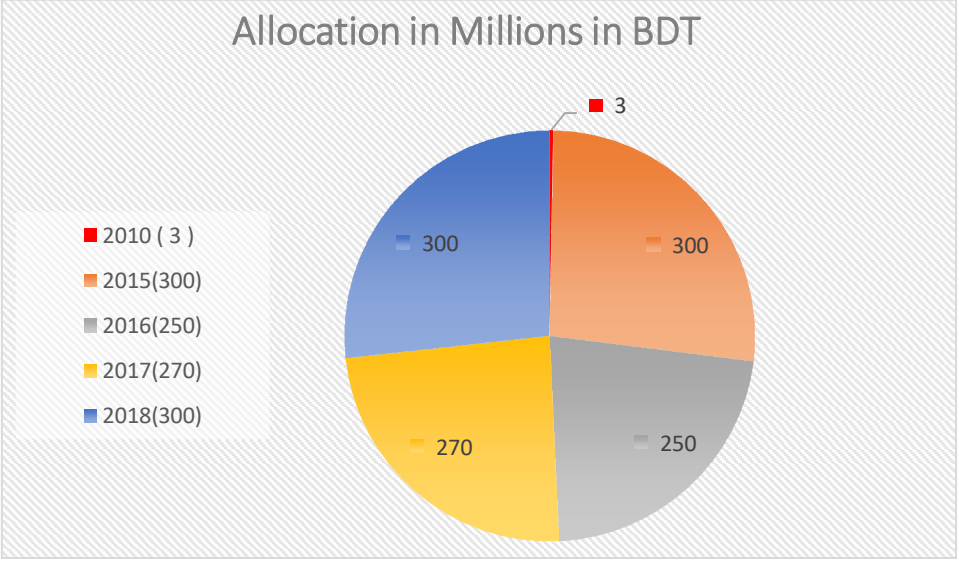

Figure-1: The fund allocated in IT sector of Bangladesh Army

In fact, creating a powerful research and development lab for Bangladesh Armed Forces with a view to embedding AI into the existing systems requires a huge financial backup. It is not just all about having a workforce that is ready for an AI based technological change.

Evaluating the Existing Scenarios

The fundamentals in benchmarking the process of evaluation of the applications of AI into the systems of BAF include:

a. Understanding AI Ready Approach,
b. Strategies for Implementing AI,
c. Data Management,
d. Creating AI Literate Workforce and Upskilling and
e. Identifying Threats.

[31] Professor Dr. Md. Mostofa Akbar, Head of Department, Computer Science & Civil Engineering Department, Bangladesh University of Engineering & Technology (BUET) (10 Sep, 2018), Interviewed at 1415 hours

Here 'the context of BAF' refers to, mainly but not limited to, areas such as warfare platforms, cybersecurity, logistics and transportation, target recognition, battlefield healthcare, combat simulation and training, threat monitoring and situational awareness and data information processing. 'Stakeholders' refers to all the wings of BAF and other organizations that are linked to the defense forces of Bangladesh. 'Workforces' refers to all the officials ranked differently in the hierarchy in BAF and other concerned organizations. Apart from interviewing the top ranked generals and AI experts, a total number of 100 commissioned officers having AI literacy and access to policy making body have been interviewed and surveyed. They recorded their answers on the scale shown below, with 5 being 'Very Strongly Agree' and 1 being 'Completely Disagree' by circling the number that they felt most closely represented the legends about the application of AI into BAF systems.

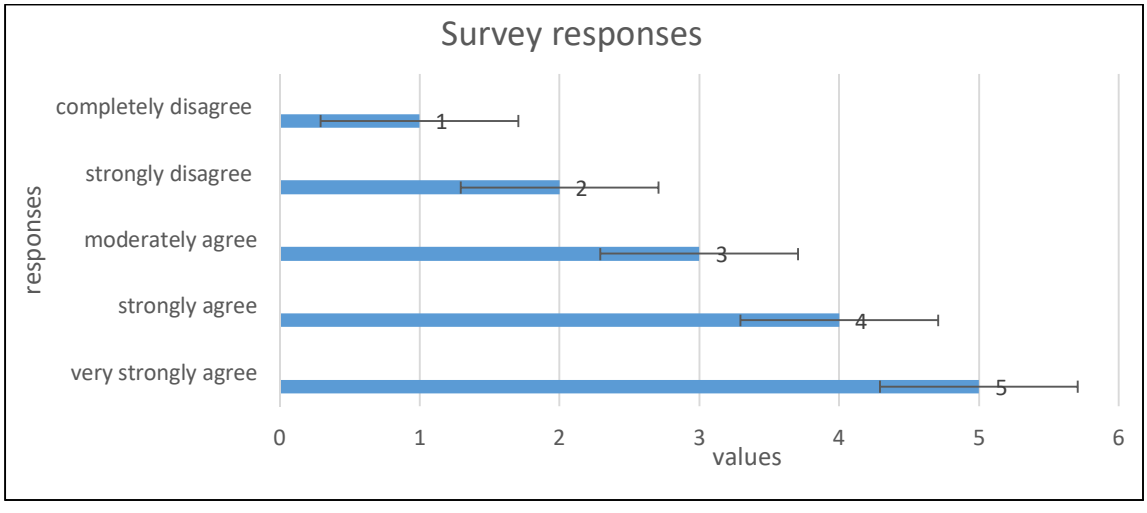

Figure-2: Survey Responses of the application of AI into BAF systems

UNDERSTANDING OF THE AI-READY APPROACH

To understand the AI-ready approach, we need to "think differently, act differently and react differently."[32] Leadership is critical in making the transformation from an organization "doing" digital things to one that is "becoming" digital. Organizations should have certain core expectations of digital leaders: "They need to make sense of vague external trends, help the organization imagine the digital future, blur the internal and external boundaries in ways that assist the transformation, educate others, repurpose technical expertise, and use design thinking methods to foster innovation."[33]

[32] Anthony Abbatiello, Marjorie Knight, Stacey Philpot, Indranil Roy, (2017 February 28). Leadership disrupted: Pushing the boundaries 2017 Global Human Capital Trends, DUP

[33] Deloitte University Press /www.dupress.deloitte.com

Cognitive Transformation

"Thinking differently"[34] is the key to lay the foundation of AI based military systems to "becoming digital." A total number of 73% respondents of the survey agree that the stakeholders in BAF are aware of the potentials of AI which indicates, an encouraging if not inspiring fact, that the institutions may seemingly be ready to take up the daunting challenges of implementing AI in their organizations to handle the ever-increasing cognitive complexities and war field threats. In fact, 63% respondents think that the Assisted Intelligence can help BAF take decisions faster and better, especially in processing millions of statistical data, forecasting future possibilities and detecting threats and targets in the battlefield scenario.

About 66% of respondents agree that the institutions are ready to facilitate AI, humans and machines to learn from each other as part of augmented intelligence, and find solutions that will be more secured, reliable, faster and effective, especially with regard to keeping data protected, projecting future growth, facilitating training of the workforce, creating battel field simulation and so on. However, as many as 61% of the respondents in the IT cell of Bangladesh Army think that the existing workforce can be trained to work with Autonomous Intelligence that can perform operations without human intervention.

Behavioral Transformation

The workforce, mainly but not limited to only commissioned officers, has to be ready to adapt to constantly shifting power and prospects of AIs. The behavioral transformations must be inclusive and reflect changes in areas such as "commitment, courage, cognizance of bias, cultural intelligence and collaboration."[35] Though only 18% respondents strongly think that the upskilling of the workforce with technical knowledge and skills can create collaborative AI compatible systems in Army, Navy, Airforce, MoD, BGB, BCG & BNCC, a few of them, not exceeding 36%, also believe that the institutions need to focus on attitudes and philosophy for behavioral transformation.

Emotional Transformation

"The effective leader must be a good diagnostician and adopt style to meet the demands of the situation in which they operate."[36] – asserts Kenneth and Heresy (1988). Carter defined emotional transformation and leadership as 'the ability to employ managerial competencies to organized performance processes by inspiring, igniting and motivating teams to meet set organizational goals.[37] 60% of the respondents think that the workforce in Bangladesh Armed Forces perceives the idea of learning to tolerate an environment of risk and ambiguity. Further to

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34 https://www2.deloitte.com/insights/us/en/focus/human-capital-trends/ 2017/developing-digital-leaders.html

35 https://www2.deloitte.com/insights/us/en/focus/human-capital-trends/2017/developing-digital-leaders.html

36 Hersey P, Blanchard KH (1988 Management of organizational behavior Utilizing Human Resources. Pretence Hall, Eagle wood cliffs, New Jersey.

37 Carter M (2008) Overview of leadership in organization

that, 69% of the respondent think that the exiting workforce has the resilience, courage and confidence to take lead in driving the changes that AI is going to introduce.

STRATEGIES FOR IMPLEMENTING AI

Application of AI in the core systems of BAF will engender a paradigm shift from the traditional to becoming digital, which is very much at par with the vision of government. What is very promising here that the institutions are already taking the strategic lead in driving changes owing to the applications of AI in their systems.

Strategies for Restructuring Organizations around AI

Restructuring organizations "around data, analytics, and AI removes traditional constraints on scale, scope, and learning that have restricted business growth for hundreds of years."[38] Airbnb, Ant Financial, Microsoft, Amazon, etc. all these corporate giants tell the world how AI-centric processes are more preferable to the traditional systems of organizational operations, facilitating greater scope of growth, prosperity and creating great avenues for learning "to drive ever more accurate, complex, and sophisticated predictions."[39]

Strategies for Restructuring Organizations around AI

When AI is introduced at the core of the systems, strategies become new puzzles. Leaders may need to rethink the organizational structures and operating models. It will also force the subordinate wings to restructure their operation models. The core systems running within the systems must display an intelligent balance between the traditional systems and AI driven eco-system. The collisions between the traditional and AI driven eco systems should be avoided smartly, "calculating the risk and opportunities."[40]

Strategical Switch to AI by BAF

Previous researches in this field suggest a transformative plan till 2030. However, according to the survey, 59% of the respondents think that the stakeholders are aware of setting up policies for the use of AI that would ensure tangible returns for each organization. Having closely analyzed the data found in the survey for this paper, the transition including implementation, observation, modification and evaluation from Artificial Narrow Intelligence to Artificial General Intelligence may well require time till 2050 in the context of BAF, where 'Phase 1' or 'Foundation of AI Application' will not extend beyond the year 2030, 'Phase 2' or 'Service Integration' will not extend beyond 2040 and 'Phase 3' or 'Modernization' will not extend beyond 2050.

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38 Marco Iansiti, Karim R. Lakhani (2020); Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World, Harvard Business Review Press (January 7, 2020)

39 Marco Iansiti, Karim R. Lakhani (2020); Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World, Harvard Business Review Press (January 7, 2020)

40 Marco Iansiti, Karim R. Lakhani (2020); Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World, Harvard Business Review Press (January 7, 2020)

Rights and Liberties

Without ethical standards and strict monitoring mechanisms, the unlicensed use of AI within the military systems can harm people and society, inviting legal risks with the world communities. As weaponization of AI can really be a potential threat to the existence of human civilization, strategies should focus more on service sectors and productivity gains.

Labor and Automation

Automation and AI technology may make people less necessary, but they will eventually make people more important. Trying to fight against hostile forces will be far more difficult, if the workforce in BAF resists technological changes within the systems. "When the workplace doesn't align with how they work and play, they disconnect; it's not relatable," says Mitch Lewandowski, vice president of Soft Tech. About 60% of the respondents think that the return of the investment on AI depends on various factors including strategies, efficiency of the workforce, up gradation and automation, opportunities, risks, time, technological landscape and so on.

APPLICATIONS OF AI IN BANGLADESH ARMED FORCES SYSTEMS

AI can transform BAF into an equally strong force like those of the technologically advanced nations. It can make the workforce up skilled, more intelligent and perform a wide variety of tasks in different areas.

Cybersecurity

Failing to build up strong cybersecurity systems causes "the erosion of the lethality of the joint force".[41] As the threats emerge faster, a slow approach is always bad for security. Pacing up to acquire developed AI based enterprise cloud for Bangladesh Armed Forces is a timely need and it has to be guarded well from being theft as it is believed to have the potential to address the challenges by enhancing tactical edge capability, meeting up episodic demand, creating resilient infrastructure, introducing scalable technology, securing applications and backing up and protecting data silos. In short AI can autonomously safeguard military data, computers, networks, and programs from any kind of vulnerabilities. It can also recognize the patterns of cyber-attacks and launch attacks to retaliate. To make it simple, Bangladesh Armed Forces first can develop, as shown below, its model following the "Pentagon's plan to consolidate many — but not all — of its 500-plus cloud contracts into a single Joint Enterprise Defense Infrastructure (JEDI)."[42]

Centralizing the security system will slow down the operation capacity. Considering this challenge, the US, instead of employing separate teams to develop and operate merges DevOps, the people who write new code with people who use them. Here the users can request upgradation

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[41] Murhpy. Thomas; Maj. Gen. Director of the Pentagon's Protecting Critical Technology Task Force. https://breakingdefense.com/2019/11/can-dod-get-speed-security-with-the-cloud/ (retrieved on 11/14/2019)

[42] https://breakingdefense.com/2019/11/can-dod-get-speed-security-with-the-cloud/ (retrieved on 11/14/2019)

directly from the developers. "The software works on the fundamentals that it doesn't change the code and keep most of it constant and introduce new features as plug and play modules."[43]

Transportation and Logistics

"We must 'rethink the concept of jobs, reconfigure the social contract, move toward a system of lifetime learning, and develop a new kind of politics that can deal with economic dislocations…"[44] Transportation and logistics sectors of BAF can highly be benefited by AI, especially with its potentials to "cost reduction, risk mitigation, reliable forecasting, expediting delivery"[45] via faster routes, improved performances and satisfactory executions of missions with a smaller number of human casualties.

Combat Simulation and Training

"You can have the finest military technology in the world, but if the people operating them aren't properly trained, you might as well be throwing rocks."[46] AI can contribute greatly to enhance the performance and the efficiency of the workforce. Using combat simulations and computerized models, soldiers can become familiar with different combat systems deployed during military operations.

Bangladesh Army has already started using combat simulation and training software. In 2015, MASA has contract with the Army Training and Doctrine Command (ARTDOC) of Bangladesh Army to supply the units with a "complete and customizable training solution."[47] "SWORD, MASA's flagship product, is a complete war game solution with automated forces used by armies to safely train command staff, widely deployed around the world."[48]

Threat Detection and Awareness

Intelligence, Surveillance, and Reconnaissance (ISR) are key to threat monitoring and situational awareness. Unmanned vehicles or devices are engaged for ISR missions. Often with a known route, equipping the UVAs systems with AI helps defense personnel to identify threat without putting themselves into jeopardy physically. For example, the use of drones (Unmanned Aerials Vehicles- UVAs) has enabled Bangladesh Armed Forces to patrol border areas, recognize potential threats, communicate information to the monitoring cells and tackle those threats at remote locations without practically being there.

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[43] www.ibm.com/Cloud/DevOps

[44] Darrell M. West, (2018) The Future of Work: Robots, AI, and Automation, Brookings Institution Press (2018)

[45] https://www.businessinsider.com/ai-supply-chain-logistics-report-2018-1 (retrieved on 11/14/2019)

[46] David Szondy; (2014) US Army examining next-gen augmented reality "live synthetic" simulations; https://newatlas.com/army-live-synthetic-future-combat-simulation/31312/ (retrieved April 02, 2014)

[47] www.masasim.com//https://masasimulation.files.wordpress.com/2019/05/pr-2019.05.07-masa-bangladesh-contract-renewal.pdf

[48] www.masasim.com//https://masasimulation.files.wordpress.com/2019/05/pr-2019.05.07-masa-bangladesh-contract-renewal.pdf

Battlefield Healthcare

AI can be integrated with battlefield healthcare systems to provide remote evacuation tasks and remote surgical support. To perform these tasks, Robotic Surgical Systems (RSS) and Robotic Ground Platforms (RGPs) can be applied. About 70% of the respondents think that the activation of AI initiatives is not likely to face challenging obstacles in the present context as long as the government has adopted the 'right policies' and appointed the 'right people 'to initiate the process immediately. Considering the challenges posed by the ongoing pandemic owing to covid-19 virus, the necessity of AI run healthcare system is felt more than ever and the current leadership of the organization is aware of it.

Warfare Platforms

Embedding AI into military weapons of certain types can improve the efficiency of land, naval and airborne platforms, making the systems less reliant on human input and reducing maintaining cost. AI driven tanks can minimize the number of human casualties in the real war field.

Data transmitted from radar and electronic warfare (EW) systems to the analyst's screen can help decide the action plans in a certain mission. In the battlefields, the soldiers involved need to take decisions in seconds. Now, transmitting data by the radar and EW and turning them into actionable intelligence quickly sound very critical. AI can perform this critical task with ease and precision and in fact "the defense industry is using AI, machine learning, and deep learning techniques to program these systems and make them into smarter, more autonomous tools."[49]

AI embedded military weapons can conduct military operations in compliance with the law of war and minimize harm to civilians. Like other advanced Armed Forces, Bangladesh Armed Forces too need "interconnected sensors and communications that are fast, robust, and hard to detect, and jammers that can be adaptive to the unknown threat."[50] AI appears to be the best option to try to make an intelligent and connected battlefield.

Data Information Processing

The core idea is about employing intelligent computer to analyze and process data instead of humans. "Neural networks",[51] or 'deep learning' means engaging a smart computer to make decision and think like human. Neural networking systems can be used in processing data, tracking, target detecting, cleaning off the unnecessary data and classification and turn the systems into an actionable intelligence.

The challenges for BAF are numerous. Primary one includes creating the workforce who will be capable of writing algorithms fit for the purpose. Secondary one is about creating a large

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[49] Iriarte. Mariana. (2018), Technology Editor, "The path to smarter, autonomous radar and EW platforms", Military Embedded Systems

[50] Thompson. Peter; (2016) Director, Business Development – Technology, at Abaco Systems, Boston, Massachusetts.

[51] http://news.mit.edu./2017/explained-neural-networks-deep-learning-0414

data bank. Next, there has to be a system of formatting and tagging the data. Using a holistic AI ecosystem to aggregate data from Bangladesh Army, Navy and Air Force will make the systems more effective, dynamic, and capable of taking decisions faster and better.

AI can integrate the IoT (Internet of Thing) and help the stakeholders deliver faster and accurately without human to human or human to machine interactions. To ensure regulatory requirement, AI can play a vital role. It can also be used to maintain data life-cycle and help Bangladesh Armed Forces get rid of unwanted data.

Conclusion

Transforming the existing military systems into AI embedded framework within next twenty to thirty years could undoubtedly help BAF emerge as a stronger Defense Force. The government is aware that AI can generate speed, efficiency, and accuracy and improvise services in the armed forces, transportation, education, agriculture, healthcare, environment, trading, banking, surveillance, media and in many other areas as well. However, the greatest challenge remains in managing the convergence of AI with other technologies. How far the AI framework will be trustworthy and reliable remains another big challenge. Formulating AI governance policy and training and upskilling of the current workforce are parts of primary obstacles. The shortage of AI skilled professionals in the country may really disrupt the expected pace.

Allocation of budgets for embedding AI framework into the existing systems and release of the fund may really be a daunting challenge, especially when the return of investment is difficult to calculate. And if the size of the budget exceeds a hundred or two hundred cores for a fiscal year, the matter may really go beyond the IT department and other mid-level policy making officials. In fact, it really requires strong patronization from the top brasses of the country's legislation body. Last but not the least, estimating the return of investments is really a challenging task as estimating the values of the loss for not having an AI embedded framework in terms of money, human life and wealth is fathomable only when you fight against a hostile force with AI embedded warfare.

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Major Tahmina Haque Munia, Signals was commissioned in the Corps of Signals with 48 BMA Long Course. She obtained BSc Engineering in CSE from MIST. Apart from her different regimental appointments, she served as Team Leader in Special Investigation Branch in Army Headquarters, (PS Dte) and as Grade-2 Staff Officer (Network) in National Defence College. She participated in the United Nations peace keeping mission in Congo (MONUC) and Ivory Coast (UNOCI). She served as Staff Officer (Operations) at Forces Headquarters Central African Republic. Presently, she is serving as Second in Command of 7 Signal Battalion.

TRANSNATIONAL CRIME: A GROWING CHALLENGE FOR BANGLADESH TO RETHINK IN THE EVE OF MUJIB CENTENARY AND WAYS FORWARD

Colonel Tofayel Mustafa Sorwar, BPM, psc

Abstract

Transnational Organized Crime (TOC) has grown to be a major security concern in today's contemporary world. TOC generally includes illegal criminal business ventures like smuggling, drug and human trafficking, arms hauling, money laundering etc. In recent era, globalization coupled with information technology accentuated global connectivity and interdependency that also paved the way for TOC to diversify and expand exploiting these opportunities. Bangladesh started facing the rise of TOC soon after the liberation. TOCs like smuggling, illegal stocking, drug and human trafficking increased due to war wrecked administration of the new born country. Father of the nation Bangabandhu Sheikh Mujibur Rahman was prudent enough to identify this menace as one of the major threats for newly born country and launched the anti-smuggling drive in early seventies. TOCs corrosively damage the national economy, democratic institutions and socio-cultural fabric posing a long term threat to national security. Thus, it is a national concern today to take effective counter measures to exterminate this devastating menace from Bangladesh. At this context, the paper will first discuss the TC and its characteristics followed by the growing impacts of transnational threats. The paper will then embark onto discussing the factors contributing to the growth of TC and its scenario in Bangladesh. At the end, the paper will discuss the ways and options for Bangladesh to effectively address the transnational threats.

Keywords: Transnational organized crime, transnational threats, globalization, border management system, national security.

Introduction

Transnational Crime (TC) has grown to be a major security concern in contemporary world. For its nature and severity of adversity, the sources of TC are more commonly identified as transnational threats in security affair. "TC involves the planning and execution of illicit business ventures by groups or networks of individuals working in more than one country."[1] "These criminal groups use systematic violence and corruption to achieve their goals".[2] Domain of TC primarily includes smuggling, drug trafficking, money laundering, human trafficking, illegal trade of weapons and explosives and others. It represents non-military threat in nature with a primary focus on gaining financial benefits through illegal business activities across the world. Security analysts around the world today mark TC as the major national security concern proliferated mainly by globalization and triumph of information technology beside other factors.

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1 National Institute of Justice, Para 1, at https://blablawriting.com/transnational-crime-is-a-national-security-threat-essay retrieved on 05 May 2010.

2 Threat to National Security, De La Sell University, 28 December, 2008 at http://www.dsu.ph/offices/sps/rotc/pdf/ms1/threat-NatlSecurity.pdf retrieved on 07 May 2020.

In the era of globalization, liberalization of market economy with the flows of information technology has triggered global business, speedy communication, higher mobility, rapid financial transactions and interconnectedness so that all the nations participate equally in the global business competitions. The opportunity of liberalization has grabbed attentions of 'organized crime groups (OCGs)' to enter into the market. Therefore, these developments not only have accelerated the process of globalization positively but also paved the way for TC to flourish, diversify and expand exploiting the same opportunities. Crime today affects almost all the states posing threat to politico-socio-economic infrastructure and national security. Developing countries are the main target regions for TCs by OCGs due to their likely weak governance system and easily manageable administration body. It is apparent that TCs contributes a worth amount of US $1.6 trillion to $2.2 trillion per year. The Asia-Pacific region is responsible for US $51.8 billion of this market, with around 11.7 million victims.[3] Considering the more profits, OCGs have a strong interest in developing regions where the TCs in various ways are growing.

For the category of developing country, Bangladesh has actively participated in every step of global market economy. Through the rises of economic and political flows, this country witnessed the growth of TC around its borders soon after the liberation in 1971. Smuggling, illegal hoarding, drug and human trafficking increased due to war wrecked administration of the new born country. Consequently, Father of the Nation Bangabandhu Sheikh Mujibur Rahman launched the anti-smuggling drive in 1974 to combat the rise of crime including TC.[4] However, the tragic assassination of Bangabandhu and subsequent political turmoil faded the spirit of Bangabandhu for a crime and corruption free Bangladesh. Thus, like many other negative trends, TCs also made a steady growth in our country during the interim period which is exacerbated further by the spiraling growth pattern of TCs in recent era. It is evident that recent human trafficking crisis in Bangladesh have increased by 61% comparing with the previous time.[5] About 256 were found as victims of human trafficking from Bay of Bengal up to June 2018.[6] Moreover, a total of 92,000 cows had entered Bangladesh and 51,592 cattle was seized in the border area in 2018.[7] The current scenarios also create a serious vulnerability in this country context. Considering the Rohingya refugee influx, it becomes a pathway for human trafficking too.[8] These circumstances showed that transnational crimes are growing in its prospects and in future, it may bring an adverse situation for the country. Since TCs are corrosively damaging the

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3 Channing, May 2017, Transnational Crime and the Developing World at http://creativecommons.org retrieved on 21 April 2020.

4 Interview with Tofayel Ahmed, Member of Awami League Advisory committee, April 23, 2020.

5 Islam, J and Ahmed, M Z. (2018). Recent Human Trafficking Crisis and Policy Implementation in Bangladesh. The Journal for Social Advancement 3: 275-291. Available at https:// www. Research gate. net/ publication/ 338898343_ Recent_Human_Trafficking_Crisis_and_Policy_Implementation_in_Bangladesh retrieved on April 25, 2020

6 World Day Against Trafficking in Persons: Bangladesh failing to take strong measures against human trafficking. Available at https:// www. dhakatribune. com/ bangladesh/ 2018/ 07/ 30/world -day- against- trafficking- in- persons-bangladesh –failing -to-take-strong-measures-against-human-trafficking retrieved on 3rd May 2020

7 Cattle Smuggling, available at https://thefinancialexpress.com.bd/public/index.php/trade/cattle-smuggling-from-india-drops-96pc-1565603687 retrieved on 27th April 2020

8 2018 Trafficking in Persons Report – Bangladesh at https://www.refworld.org/docid/5b3e0ba9a.html retrieved on 23rd April 2020

economy and socio-cultural fabric of the nation posing a long term threat to national security, it is high time to take prudent measures to counter this menace from the country.

TRANSNATIONAL CRIME: TYPES AND CHARACTERISTICS

Transnational Crime

With its given instability and tensions around the world, transnational crime is yet a changing notion. Thus, the UN office on Drugs and Crime considers it to be a changing and flexible phenomenon.[9] "Transnational crime is such crime coordinated across national borders, involving groups or networks of individuals working in more than one country to plan and execute illegal business ventures."[10] The intention of TC is business due to its primary motivation lies on gaining economic benefits. It is evident that there are 11 illegal sources of crimes of TC, which estimated a worth of economic achievement ranged between US $1.6 trillion and $2.2 trillion per year globally.[11] To describe the consequences and circumstances of transnational crimes in the context of Bangladesh, here 11 types of TCs are evaluated in the given table-1 identifying the vulnerability of the country. In addition to the mentioned threats, money laundering is one of the remarkable approaches of transnational crime that has impact on those types. All these vulnerabilities of TC would be explained as a threat to Bangladesh.

Table-1: Major TCs around the World and Vulnerability of Bangladesh

Ser	Types of TCs	Worth Amount	Vulnerability of Bangladesh
1.	Drug Trafficking	US$426 billion to $652 billion	High
2.	Arms and Light Weapons Trafficking	US$1.7 billion to $3.5 billion	Moderate
3.	Human Trafficking	US$150.2 billion	High
4.	Organ Trafficking	US$840 million to $1.7 billion	Moderate
5.	Cultural Property	US$1.2 billion to $1.6 billion.	Moderate
6.	Counterfeit and Pirated Goods	US$923 billion to $1.13 trillion	Low
7.	Illegal Wildlife Trade	US$5 billion and $23 billion	Moderate
8.	Illegal and Unreported Fishing	US$15.5 billion to $36.4 billion	Low
9.	Illegal Logging	US$52 billion to $157 billion	Moderate
10.	Illegal Mining	US$12 billion to $48 billion	Low
11.	Crude Oil Theft	US$12 billion to $48 billion	Low

Source: Transnational crime and the developing world March 2017[12]

[9] UNODC and Crime available at https://www.unodc.org/unodc/en/ -crime/intro.html retrieved on25 April 2020.
[10] Transnational Crime available at en.wikipedia.org/wiki/Transnational_ _crime retrieved on 20 April 2020.
[11] Channing May 2017, Transnational Crime and the Developing World at http://creativecommons.org retrieved on 21 April 2020.
[12] https://www.tralac.org/images/docs/11461/transnational-crime-and-the-developing-world-gfi-march-2017.pdf

Characteristics of TCs

Objective Basic objective of TC is financial or economic gain through criminal business activities. Referring to TC, the US National Security Council states that they have economic gain as their primary goal, not only from patently illegal activities but also from investment in legitimate businesses.[13]

Nature and Dimension Transnational Threat is primarily non-military in nature. They pursue purely non-military objective of gaining financial benefit. Consequently, they do not resort to violent military actions but adopt criminal business activities across the states that make it transnational in dimension. It operates across the states or continents. Global drug production hub named 'Golden Triangle' and 'Golden Crescent' are figured below and its route of channel to various continents depicts the transnational nature and dimension of TC.

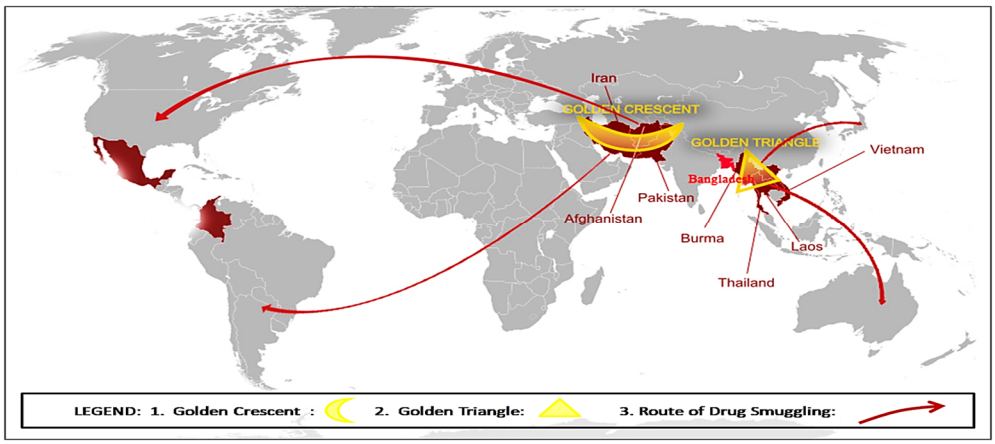

Figure-1: Transnational Nature of TC

Source: Heroin World-en.svg[14]

Organizational Structure OCG and their networks covertly conduct TCs which are primarily hierarchical. It normally works under a structure with minimum three levels of authority as ownership level, mid-level and working level. However, for contingency situations nonmembers are also integrated around these levels for any particular crime for collaboration.

Collaboration By nature, TC is conducted across the boundaries of states over a vast geographical area continuously for a longer period of time. Such continuous and lengthy conduct of crime and passage of associated criminals can only be sustained through an effective collaboration with corrupt state officials and associates. Thus forming nexus and links with corrupt part of the government and social elements is one of the basic requirements of conducting TC.

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[13] Strategy to Combat Transnational Crime: Definitions available at https:// obama white house. archives. gov/ administration/ eop/nsc/transnational-crime/definition retrieved on 28th April 2020

[14] https://commons.wikimedia.org/wiki/File:HeroinWorld-He.svg

Nature and Magnitude of Threat Posed by TC

Multi-State Threat TC is normally conducted across the number of states, as its damaging impacts do not remain confined to a single state. Instead, it simultaneously affects number of countries making the entire region volatile. One can easily perceive about its multi-state impacts from fragile political, cultural and socio-economic infrastructure of TC prone South American or South East Asian countries.

Crime-Terror-Insurgency Nexus Terrorists and insurgents increasingly are turning to TC to generate funding and acquire logistical support to carry out their violent acts.[15]Although TC differs from terrorism and insurgency in their objectives, they complement and cooperate with each other in functional domain. Intelligence survey detected a complementary nexus between these menaces on terms of protection and financial support. Evidences are many where TC groups provide financial support in exchange of armed protection from terrorists and insurgents for running their criminal business. Many a time the elements from terrorists and insurgents are used as their private army to protect the interest of the crime network. Thus, TC offers financial leverage for growth of terrorism and insurgency which is a grave threat to any state at present days.

Damaging to Socio-Economic Infrastructure The apparent growing nexus in some states among TC groups and elements of government including intelligence services and high-level business figures represents a significant threat to economic growth and democratic institutions.[16] Through evasion of legal taxes, money laundering, accumulation of black money, TC can destabilize the economy of the small and weak countries. The combined effects of crime in the economic field are inflation, the ineffective distribution of income, the breakup of the free market and state regulation of the economy, a substantial loss of productivity.[17]

Threat to National Security The corrosive damaging effects of TC to a nation's socio-economic and political infrastructure endanger the national entity in the long run. "Transnational crime (TC) poses a significant and growing threat to national and international security, with dire implications for public safety, public health, democratic institutions, and economic stability across the globe."[18] TC penetrates in the vital organs of state mechanism through corruption, bribing and unethical nexus. Over the years as they expand, they tend to establish a parallel authority within the legitimate government to dictate even political terms. They may draw violent

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15 Transnational Crime-A Growing Threat to National and International Security, US National Security Council Report, at https://obamawhitehouse.archives.gov/administration/eop/nsc/transnational-crime/threat retrieved on 30 April 2020.

16 Transnational Crime-A Growing Threat to National and International Security, US National Security Council Report, at https://obamawhitehouse.archives.gov/administration/eop/nsc/transnational-crime/threat retrieved on 30 April 2020.

17 Wharton Econometrics-86The Income of crime, In United States Government. President's Commission on crime. The impact: crime. Washington: Government Printing Office. 1986.

18 US National Security Council Report, loc Cit.

non-state actors, terrorists and radicals in their side to materialize their objective. Over a long period of time they can corrosively damage political and democratic institutions, destabilize socio-economic and cultural infrastructure, damage economy threatening a country to be a failed state. Events in Somalia, Afghanistan or South America bear the testimony of such consequences. Therefore, TC is considered to be a vital threat to national security in contemporary era.

FACTORS AND TRENDS OF TC IN BANGLADESH

Factors Contributing to Growth of TC in Bangladesh

Geographic Reality Geographically Bangladesh lies in the center of two global drug-producing regions: Golden Triangle and Golden Crescent respectively towards north and west as diagrammed in figure-2 below. Proximity of such global drug producing hub enhances its vulnerability to TC. Besides its domestic problem at Chattogram Hill tracts, Bangladesh is also bordered by the insurgency prone areas of India and Myanmar. Insurgency weakens the administration and good governance, paving the way of breeding of TC. Land border of Bangladesh runs through plain lands, villages and habitation, jungles, hills and in some places along the river.[19] Such interposing features make Bangladesh border too much porous. More porous the border is, more it is conducive for TC to operate.

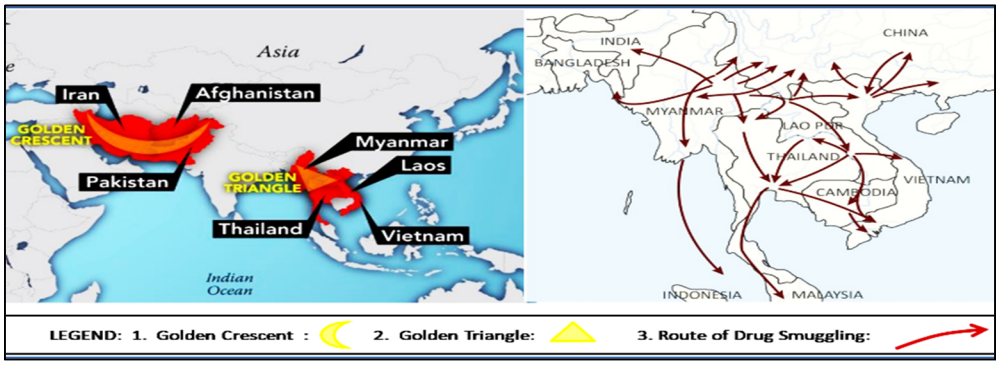

Figure-2: Geographical Vulnerability of Bangladesh to Hubs and Routes of TC

Source: Drug abuse amidst pandemic IASbaba.com and the Diplomat May 2019

Socio-economic Vulnerability Bangladesh is a developing country having an expanding economy of 7.7 % growth rate.[20] However, due to large population of over 15 million and legacy of past poverty, it still inherits much critical socio-economic vulnerability. There is poverty, unemployment, unequal distribution of wealth and resources, lack of education, facilities and opportunities mainly in rural and border area. Such fragile socio-economic infrastructure in rural

[19] Countering Transnational Security Threats of Bangladesh, Aziz Ahmed, Journal of Sociology, Volume 1, Number 1, Begum Rokeya University, June 2018.

[20] 2020 Index of Economic Freedom at https://www.heritage.org/index/country/bangladesh?version=11 retrieved on 21 April 2020.

and border areas makes a substantial part of our population vulnerable to be exploited by TC groups and their nexus.

Corruption TC breeds and lives on corruption. "Violence and corruption are the usual means they adopt to pursue their mission".[21] Corruption acts as lifeline of TC to survive and expand. Although Bangladesh is reviving from its devastating corruption state of the past, still it is pervasive in the society and culture. Corruption substantially weakened our governess and administration. TC exploits the corrupt segment of the government and the society to establish their nexus and network to conduct criminal business. Through corruption nexus they also ensure their immunity from legal measures and consequences.

Cohesive Border Population People along both sides of the borders of Bangladesh-India and Bangladesh-Myanmar were under the same political framework during colonial period. Historical and political legacy of the past imbibed socio-economic and cultural cohesiveness amongst people on both sides. Both are also poor with less employment and opportunities that keeps them vulnerable to fall easy prey of TC. With socio-culturally akin people on either side of the border, forming a trans-border crime nexus amongst them is not a critical task for TC groups.

Border Management Factors Border management in Bangladesh or in any country is a multi-agency enterprise. Border Guard Bangladesh (BGB) is the principal organization for ensuring the security of our border. Bangladesh Police, Bangladesh Coast Guard, Bangladesh Customs, Department of Immigration and Passport, Department of Narcotics Control, and other law enforcing agencies are also contributory elements of border management system. Although development process is on, most of these organizations are not yet strengthened and modernized adequately for enforcing effective border security. An effective institutional framework is absent for coordination and cooperation amongst other border management agencies. Regional cooperation with neighbours and counterparts, the basic ingredient of fighting transnational crime, is also inadequate. These factors coupled with others manifest critical challenges for the border management system of Bangladesh to form a stronger counter strategy against the dynamic and diversified transnational threats of recent times.

Major Transnational Threats in Bangladesh

Drug Trafficking Bangladesh is now a commonly used transit point and route for drug and narcotics trafficking. "A host of factors have contributed to Bangladesh becoming a lucrative narco-transit-zone for the transnational drug trade. Easy access to international air and sea links, and modest detection and interdiction capability are responsible for large-scale drug trafficking activities in the country"[22] Proximity of global drug producing zones and culture of drug abuse amongst youths are also principal contributory factors to the menace of drug trafficking in and

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[21] Finckenauer, J., and Y. Voronin, The Threat of Russian Crime, Washington DC: U.S. Department of Justice, National Institute of Justice, 2001, 933.

[22] The Daily Star, 31 March 2007.

through Bangladesh. Recoveries of few major types of drugs by Rapid Action Battalion are shown below at table-2:

Table-2: Recoveries of Major Types of Drugs Trafficking

Categories of Drugs	2016	2017	2018	2019
Cannabis (Kg)	4788	4210.5	4762.504	18787.2
Yaba (Pcs)	7757882	7816829	9630839	8712781
Heroin (Kg)	26.7	31.6	32.7	46.9
Phensidyle (Bottle)	110705	91938	131233	536615

Source: Operations Wing RAB HQ[23]

Illegal Trade of Arms and Explosives Bulk smuggling of arms and explosives is not very wide in Bangladesh. However, small scale smuggling of arms and ammunition in or through Bangladesh is countable. South-east and southern part of Bangladesh is used as transit route for arms smuggling. Report says that illegal arms enter into Bangladesh through 48 points around the bordering areas.[24] The arms recovery by Rapid Action Battalion in recent years is given in the table below:

Table-3: Arms and Ammunition Recovery by RAB

Year	2015	2016	2017	2018	2019
Arrested	12918	9504	8997	23930	19652
Arms	861	934	1066	986	715
Ammunition	9774	63064	12408	23256	3854

Source: Operations Wing, RAB HQ[25]

Money Laundering Money laundering in Bangladesh may top the list of transnational crimes as far as the detrimental impact to national economy is concerned. The money laundered in Swiss Bank amounts 4,064 crore in 2017, Tk. 5,575 crore in 2016 and Tk. 4,423 crore in 2015.[26] Underground 'Hundi System', ill motivation of wage earner expatriates and corrupt elite segment of the society all contribute money laundering either by facilitating or committing by themselves. "Money laundering has become a serious concern for Bangladesh in the current period. Terrorist groups use the means of money laundering for financing terrorist and militant activities." [27] The profits of all sources of TCs channeled through money laundering.

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23 This statistic collected from the source of Operations Wing, RAB Headquarter, May 20, 2020.

24 Arms Trade in Bangladesh, News Dawn, 27 May 2011 at https://newsdawn.blogspot.com/2011/05/ arms-trade-in-bangladesh.html retrieved on 30 April 2020.

25 Operations Wing, Headquarters, Rapid Action Battalion, interviewed on 01 April 2020

26 Swiss National Bank Report 2017 at https://www.daily-sun.com/post/319989/Money-Laundering:The-Dark-Secrets- retrieved on 20 December 2019.

27 Transnational Security- Threats facing Bangladesh, BIPS Research Team, Bangladesh Institute of Peace and Security Journal, Issue 8, 2010.

Smuggling It is the most common trend of TC around Bangladesh border. Here smuggled items and goods normally include livestock, textiles, fertilizer, medicine, small machineries, food, consumer goods etc. Of them, cattle smuggling is the most significant all along with Indian border. Seizure lists of smuggled cattle and gold over the years shown below depict the severity of this crime around the border of Bangladesh.

Table-4: State of Yearly Seized Cattle by BGB

Year	Nos
2015	523
2016	4549
2017	10992
2018	9181
2019	11572
Total	**36817**

Source: Data Bank of BGB Office[28]

Human Trafficking Human Trafficking in Bangladesh has grown to be a lucrative TC both as source and transit. TIPs Bangladesh section has identified Bangladesh as a source and transit point for men, women and children trafficked for forced labour and sexual exploitation".[29] Table below shows the statistics of human trafficking in Bangladesh.

Table-5: Human Trafficking in Recent Years

Categories	2015	2016	2017	2018 (up to June)
Men	1218	365	382	118
Women	327	283	259	96
Child	128	122	129	42
Total	1673	770	770	256

Source: Online News Portal Dhaka Tribune, Bangladesh 2018/07/30[30]

FIGHTING TCs IN BANGLADESH: WAYS AND OPTIONS

Historical Perspective of Fighting TC in Bangladesh

Soon after the liberation, new born Bangladesh had been struggling to recover from the worst legacy of colonial and Pakistani regime. War wrecked country had been suffering from

[28] Deputy Director General, Operations, BGB, interviewed on 01 February 2020.

[29] Transnational Security- Threats facing Bangladesh, BIPS Research Team, Bangladesh Institute of Peace and Security Journal, Issue 8, 2010.

[30] World Day Against Trafficking in Persons Bangladesh at https:// www. dhakatribune. com/ bangladesh/ 2018/ 07/ 30/world-day-against-trafficking-in-persons-bangladesh-failing-to-take-strong-measures-against-human-trafficking retrieved on 2nd May 2020

fragile politico-socio-economic infrastructure and governance problem in the early 70s. Pro-Pakistanis and corrupt segment of the society started to exploit this situation to destabilize the country. They adopted TCs in the form of smuggling, black marketing, and illegal hoarding etc. all around the country.

At this context, Bangabandhu was prudent and wise enough to identify this grave threat to nation which he realized as one of the root causes of suffering for his beloved general mass of the population. Consequently, he took bold and robust step to curb this trend from the country. He declared all out drive integrating Army, BDR, Rakkhibahini, Police and all other law enforcing agencies to exterminate the growing TCs from new born country[31].

To pursue his noble motive, Bangabandhu took all out efforts to create strong opinion against this criminal nexus. In all his visits, speeches and addresses, he relentlessly spoke against these organized criminals and highlighted negative impacts of their criminal acts on the nation and the general mass of the population. He tried to motivate the entire nation to galvanize into a strong resistance against these organized crime and criminals. He was aware of the likely conspiracies of the reactionists. Yet his patriotism, commitment and dedication for the people and the nation led him to pursue his mission. The reason being the Father of the Nation always valued the betterment of this nation more than his own life.

Ways and Options

Fostering Regional Cooperation TC or transnational threats operate across the states or regions. Thus, it cannot be countered by a single country alone. Developing regional cooperation is, therefore, a rudimentary requirement for fighting transnational threats. A regional platform or collaboration scheme integrating India, Bangladesh and Myanmar or SAARC countries may be the most effective solution in these regard. Under the established regional political framework all concerned forces and agencies of border management should cooperate and work. Policy guidelines may be formulated to define the scope and parameter of cooperation and coordination. ASEAN countries can be taken as a good example here that forged into a good and effective collaborative border management system.

Organizing National Platform Fighting TC is not a single agency task rested on border management system. TC entangles corrupt segment of the government and the administration penetrating into state mechanism. Thus, without forming a national level platform or body, fighting TC is really impossible. Our country lacks such national level body. There is dire need of stronger cooperation and coordination amongst Ministry of Home Affairs (MOHA), Ministry of Foreign Affairs (MOFA), BGB, Custom/National Bureau of Revenue (NBR), Police, Bangladesh Bank Financial Intelligence Unit (BFIU), Intelligence Organizations(IO), Department of Narcotics Control (DNC) and Department of Passport and Immigration (DIP) both at national and local level. Such huge level of coordination and cooperation is not possible without an

[31] Imam HT, Political Adviser to Honorable Prime Minister interviewed on 25 February 2020.

authoritative framework from the highest national level down to various agencies and forces working on ground. A national level platform integrating all concerned agencies as shown in the diagram below may be formed to formulate and coordinate counter TC policy.

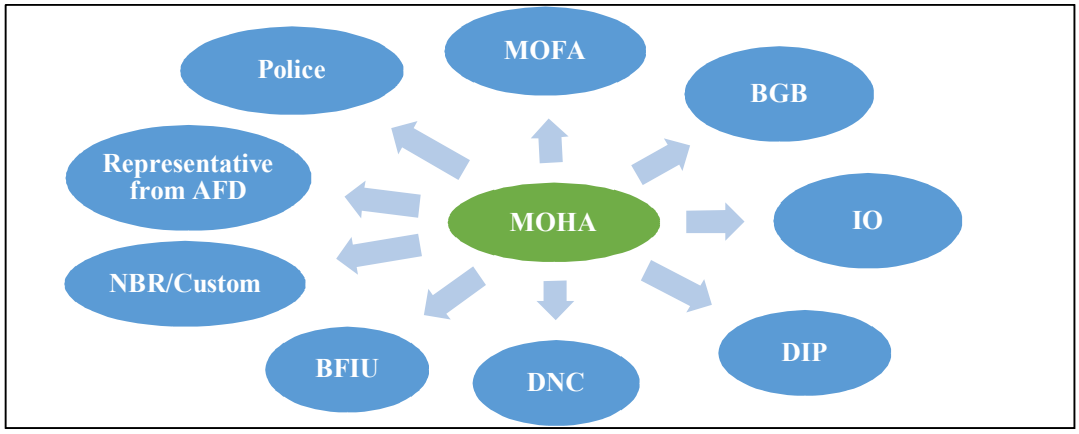

Figure-3: Prospective strategic management body for prevention of TC

Source: Author's own construct

Strengthening Border Management System and Agencies Bangladesh border management system is a collective scheme comprising BGB, police, customs, passport and immigration department, department of drug and narcotics, special branch of police etc. BGB performs the central role of enforcement of border security while others are in their respective role of inspection, checking, identification and legal procedures. All these organizations need to strengthen in terms of strengths, modern equipment and procedure. Shortfall in manpower of all agencies should be fulfilled and increased where necessary. "Provisioning of modern gazettes and technologies like scanners, biometric signature/data collection equipment, surveillance equipment etc in all land ports, maritime ports and airports can increase the success rate of preventing border crime".[32] Their legal authority and apparatus may also be revised and updated if found inadequate to meet the diversification of growing TC of recent era.

Developing an All-encompassing Intelligence Network A strong and coordinated intelligence network encompassing all intelligence organizations is the foremost requirement for fighting TC. The network should include intelligence wings integral to different border security agencies and other national intelligence organizations. The network should have central data base with access permission on need to know basis. Modern electronic gadgets based mechanism for identification, spotting, monitoring and evaluating may be provisioned with connectivity to concerned agencies. A strong, modern and coordinated intelligence network of such kind can prevent the most of TC before it occurs.

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[32] Countering Transnational Security Threats of Bangladesh, Aziz Ahmed, Journal of Sociology, Volume 1, Number 1, Begum Rokeya University, June 2018.

Adopting Smart Border Management System In general, Smart Border Management can be defined as modern technology based border management system. Smart border management should have 03 key technology infrastructures".[33] First, Smart Identification will ensure authorized persons are allowed to pass or enter. This means biometric identification process to be incorporated for quick and correct identification. The utilization of the above biometric technologies as stand-alone methods or in combination with incorporate multiple layers of security such as finger print, face identification can also be coupled with in smart identification system. Second, Smart Inspection will ensure legitimate people with legal items and goods. This is achieved through ATM like smart ID or national card arrangements and an array of various kinds of scanners and sensors for weapon, goods, drugs etc. Third, Monitoring and Surveillance System typically comprise of a sensor layer, which is arranged strategically to allow a layered defence mechanism; a network backbone which allows data transmission in real time from the field of location to the relevant stakeholders and a command centre where all decision makers and stakeholders can monitor and analyse the incident and initiate the response mechanism for incident management and control based on pre-defined standard operating procedures (SOPs).[34]

Strict Action to Prevent Money Laundering by Concerned Bodies Since money laundering escalates the all kinds of TCs, it should be taken under strict management. The authorities like BFIU/ACC/CID and all other concerned bodies to function strict actions against any kind of money laundering. Together those organizations can take necessary steps for TC reduction.

Conclusion

Transnational Crime is a major security concern in contemporary world. Globalization coupled with information technology has also paved the way for TC to increase that poses threat to national security. Bangladesh witnessed the rise of TC soon after the liberation. Consequently, Father of the Nation Bangabandhu Sheikh Mujibur Rahman launched the anti-smuggling drive in 1972. TCs are corrosively damaging the economy and socio-cultural fabric of the nation posing a long term threat to national security. At this context, the paper is written to discuss various facets of and options for Bangladesh to address the transnational threats effectively.

Growth of TC in Bangladesh remains hostage to Asian geo-strategic power equation and power struggle of the power blocks. Proximity of global drug producing zones, insurgency prone areas of the India-Myanmar and porous border makes it geographically vulnerable to the growth of transnational threat. Poor socio-economic condition of the rural segment of its population readily pushes them to be exploited by crime networks. With socio-culturally akin people on either side of the border, forming a trans-border crime nexus amongst them is not also a critical task for TC groups. Weakness of our border management system and agencies in terms of

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[33] Smart Border Management an Indian Perspective, Federation of Indian Chamber of Commerce and Industry (FICCI)Journal September 2016 at https://www.pwc.in/assets/pdfs/publications/2016/smart-border-management-an-indian-perspective.pdfretrieved on 30 April 2020.

[34] Ibid 25.

strength, modern equipment and process prevents it to be effective against transnational threats. This is exacerbated further by lack of inter-agency and regional cooperation.

For an effective counter strategy against the transnational threats, Bangladesh should forge into an effective regional platform with neighboring countries. There should also be a national level body to coordinate the entire activities of all concerned agencies and forces involved. Strengthening all agencies in terms of manpower, modern gadgets and process is also a significant requirement. Developing a comprehensive intelligence network encompassing all intelligence organs and institutions will pay dividends. Finally, arrangement of smart border management system including smart identity, inspection and monitoring system can make our border management system efficient and strong to counter transnational threats.

Recommendations

Based on the study and research above, followings are recommended:

a. A regional platform to fight TC may be established integrating Bangladesh, India and Myanmar. However, a separate study may be carried out on this aspect.

b. Bangladesh may form a national level platform to fight TC with following elements:

(1) Ministry of Home Affairs.

(2) Ministry of Foreign Affairs.

(3) Border Guard Bangladesh.

(4) Custom/National Bureau of Revenue.

(5) Bangladesh Police.

(6) Bangladesh Bank Financial Intelligence Unit.

Journals/Articles

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10. Border Management in Bangladesh: Challenges and Ways Forward, Aziz Ahmed, Journal of Sociology, Volume- 1, Number 1, Begum Rokeya University, September 2017.

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12. Islam, J and Ahmed, M Z.Recent Human Trafficking Crisis and Policy Implementation in Bangladesh. The Journal for Social Advancement 3: 275-291, 2018, at https://www.researchgate.net/publication/338898343_Recent_Human_Trafficking_Crisis_and_Policy_Implementation_in_Bangladesh retrieved on April 25, 2020

News Papers

13. The Daily Star, 31 March 2007.
14. Arms Trade in Bangladesh, News Dawn, 27 May 2011 at https://newsdawn.blogspot.com/2011/05/ arms-trade-in-bangladesh.html retrieved on 30 April 2020.
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16. Cattle smuggling from India drops 96pc. Available at https://thefinancialexpress.com.bd/public/index.php/trade/cattle-smuggling-from-india-drops-96pc-1565603687 retrieved on 27th April 2020
17. 2018 Trafficking in Persons Report – Bangladesh. Available at https://www.refworld.org/docid/5b3e0ba9a.htmlretrieved on 23rd April 2020
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Colonel Tofayel Mustafa Sorwar, BPM, psc was commissioned with 31 BMA long course in The East Bengal Regiment on 19 December 1994. Apart from mandatory courses, he completed Basic Intelligence Course from School of Military Intelligence and UN Military Observer Course from German UN Training Centre. Besides Regimental Staff appointments, he was Grade-2 Staff Officer (Intelligence) in 69 Infantry Brigade. He served as a peace keeper in United Nations Mission in Liberia and as the Deputy Contingent Commander of Bangladesh Battalion-5 in Mali. He was the Officer in Charge of Army Security Unit and Field Intelligence, Dhaka. He also commanded 20 Bangladesh Infantry Regiment successfully for more than 2 years. He also served as Grade-1 Staff Officer in Directorate General of Forces Intelligence. He prepared first professional application software for Bangladesh Army namely 'Sena Professional Diary'. Individual is a graduate from Defence Services Command and Staff College, Mirpur. He was awarded with Bangladesh Police Medal (BPM) 2019 for his outstanding performance in RAB Forces. Presently, he is serving as the Additional Director General (Operations) at RAB Headquarters.

BIG DATA FOR BANGLADESH ARMY: A FORCE MULTIPLIER FOR FORCES GOAL 2030

Lieutenant Colonel Md Amir Hossain Mollah, psc, Sigs

Abstract

Big data is one of the foundations of cutting edge information technology that defines extremely large data sets which are beyond the capability of available means to process. Big data is high volume, high velocity, and high variety information assets that require new forms of processing to enable enhanced decision making, insight discovery and process optimization. A wide range of traditional and modern sources generate this huge amount of structured, semi-structured and unstructured data. Big data analytics is the process of collecting, organizing and analyzing large sets of data to discover patterns and other useful information which can immensely benefit organization like the military. Bangladesh Army can adopt this technology to a number of sectors both in war and peacetime. Few striking fields where we can start are healthcare, intelligence, operation and administration. In all fields, performance is likely to be boosted to a new height which cannot be done otherwise. Big data analytics includes machine learning, artificial intelligence and data management science. All these latest technologies are already utilized by modern Armies because of their ability to become a force multiplier. Current data management system of Bangladesh Army has a number of limitations for using them as smart and automated data management scheme. We can initially utilize the commercial products and later follow up with in-house R&D. With a well thought out and appropriate plan, presently available qualified IT personnel can commence this novel task and gradually train required people.

Keywords: Big data, Hadoop, big data analytics, time series analysis, predictive analytic, machine learning, artificial intelligence, Defense Advanced Research Projects Agency (DARPA).

Introduction

The dream of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman of having a strong and recognizable force appears to be surfacing. Bangladesh Army's aspiration of achieving Forces Goal 2030 is in full swing with mammoth transformation for the last few years. New units, installations and formations are raised and they are trying to cope with the demands of the modern day challenges. Procurement of new weapon, equipment, technology, service and associated software for all fighting, supporting arms and services have become a regular event now. But adaptation with the speedy changes in different fields of administration, warfare, strategy and technology is the key towards the fulfillment of becoming a stronger force in regional and world stage. Despite progress, the advancement towards modern technology seems trailing behind the requirement of the future warfare. Big data and big data analytics is one of the cutting edge technologies that can change the way we manage things in the Army.

The era of digitization is evolving everywhere in a modern society including military. We move deeper from mere information age to rapidly evolving digital information age and many decisions are taken by public and private corporations using data analytic. 'Big Data'[1] is the data that contains greater variety arriving in increasing volumes and with ever-higher velocity. Big data consists of more complex data sets, especially from new data sources and is so voluminous that traditional data processing software cannot manage them. They have meaningful insight that enhances correct, accurate and advance decision making factors both in peace and war time. With every modern weapon, equipment, system and technology, a huge amount of data is produced in addition to the conventional data. Many hidden facts, unnoticed valuable information and correlation can be extracted if appropriate analytical tools are used. Big data often refers to the use of predictive analytics, user behavior analytics, or certain other advanced data analytics methods that extract value from data, and seldom to a particular size of data set[2].

In future, favorable decision of war will be inclined to the side who would better handle the data, information and technology. In the advent of digital age, wars are becoming increasingly asymmetric in nature between countries or groups that have disproportionate military assets and capabilities. Big data analytic can assist Bangladesh Army in warfare and some sectors like healthcare, administration, intelligence etc. serving as a force multiplier. At the heart of every modern and lethal weapon, enormous data processing takes place to achieve deadly precision. Willingly or unwillingly our society including the military dragged into the ocean of data and associated technology. Army members, their family, friends and foes are increasingly indulging them into latest technologies. All are present in a common platform; the internet, social media etc. and keep footprints. Our arms, weapon, equipment, system etc. are gradually operated and controlled by algorithms, data and different networks. Traditionally and till now the use of IT system is mere typing, storing, communicating or transferring data and we must add to it the smart use of data where the system will work for us compensating various gaps and shortcomings. This effort would work as force multiplier in achieving Forces Goal 2030.

Terminologies Used in this Article

Big Data Any amount of data that is beyond the capability of available/traditional means to process is big data.

Parallel-Processing Parallel processing is defined as simultaneously breaking up and running program tasks on multiple microprocessors, thereby reducing processing time. Computer with two or more processors can do parallel processing or it can be done in a computer network.

Hadoop Hadoop is an open source distributed processing framework that manages data processing and storage for big data applications in scalable clusters of computer servers.

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1 Oracle, what is big Data, (Assessed from https://www.oracle.com/big-data/what-is-big-data.html on 13 July 2020)

2 Youssra Riahi, Sara Riahi Big Data and Big Data Analytics: Concepts, Types and Technologies, November 2018, International Journal of Research and Engineering (Accessed from https://www.researchgate.net/publication /328783489_Big_Data_and_Big_Data_Analytics_Concepts_Types_and_Technologies on 14 July 2020)

Time Series Analysis A statistical technique that deals with time series data or trend analysis is called time series analysis. Time series data means that data is in a series of particular time periods or intervals.

Predictive Analytic Predictive analytic is the practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends. It forecasts future events with an acceptable level of reliability, and includes what-if scenarios and risk assessment. It cannot guaranty exact future.

Artificial Intelligence (AI) This is a branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. Using AI a device perceives its environment and takes actions that maximize its chance of successfully achieving its goals.

Machine Learning Machine Learning is a branch of AI. It is the ability of IT systems to independently find solutions to problems by recognizing patterns in databases. On the basis of existing algorithms and data, Machine Learning enables IT systems to recognize patterns and develop adequate solutions.

Defense Advanced Research Projects Agency (DARPA) This is an agency of the United States Department of Defense who is responsible for the development of emerging technologies for use by the military. Created in February 1958 by President Dwight D. Eisenhower, initially it was known as the Advanced Research Projects Agency (ARPA). The agency was formed during the cold war era to make a response to the Soviet launching of Sputnik 1 in 1957.

Cloud-Computing Cloud computing is defined as storing and accessing data and programs over the internet instead of computer's hard drive. It is the hardware and software services from a provider on the internet.

BIG DATA TECHNOLOGY

Big Data technologies include distributed computational systems, distributed file systems, massively parallel-processing systems, and data mining based on grid computing etc.[3] Since these are the core aspects of modern algorithms and systems, modern military weapon and equipment system often include them in their functioning.

Definition of Big Data

A widely accepted Big Data definition was formulated by Gartner who updated it in 2012 stating that "Big data is high volume, high velocity, and/or high variety information assets that require new forms of processing to enable enhanced decision making, insight discovery and

[3] Science Direct, Big Data Technology, 2020 (Accessed from https://www.sciencedirect.com/topics/computer-science/big-data-technology on 26 January 2020)

process optimization."[4] Big data defines extremely large data sets. It means a massive volume of both structured and unstructured data. Because of its enormously big size, it is difficult to process using traditional database management and software techniques. The dynamic nature of the data demands large amount of computing power, specific design features and fast networking. With special analysis, big data can reveal patterns, trends, and associations, especially relating to human behavior and interactions. It has the following important characteristics:

a. Volume (data is too big, massive).
b. Variety (structured, semi-structured or unstructured).
c. Velocity (the speed at which it is generated, gets refreshed and disseminated).

Data accumulation started with analog data during 1980s. After digital era started in late 1990s, overall data size started growing exponentially. The growth of data since 1986 and up to 2007 is exponential from the start of digital edge as shown in figure 1(a)[5]. International Data Corporation (IDC)[6] opined that digital universe will be double in every two years and projected

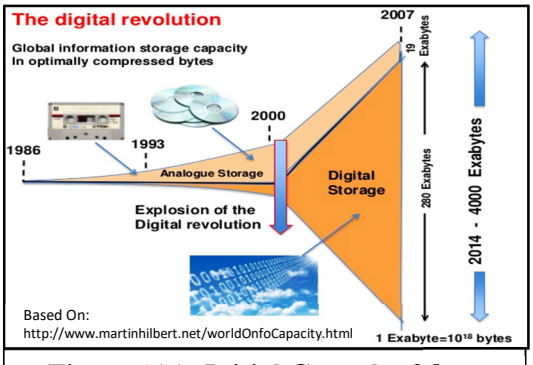

Figure 1(a): Initial Growth of data (from 1986 to2007)

Source: https: // www. slideshare. net/ learn RDM/from - open- data- to- open - science -by-geoffrey-boulton (Accessed on 14 July 2020)

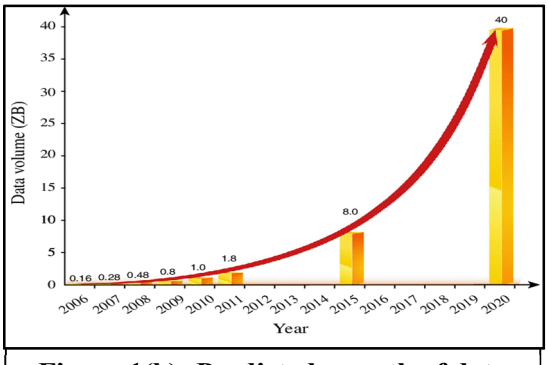

Figure 1(b): Predicted growth of data up to 2020 (Based on IDC's Digital Data Universe Study)

Source: https://www.researchgate.net/ figure/Global – growth – trend - of- data - volume-2006-2020-based-on-The-digital-universe-in-2020_fig5_274233315 (Accessed on 14 July 2020)

[4] Gartner, Gartner Glossary, (Accessed from https://www.gartner.com/en/information-technology/glossary/big-data on 20 January2020)

[5] Slide Share, From Open Data to Open Science, Slide 7/31, Geoffery Boulton, 2020 (Accessed from https://www.slideshare.net/learnRDM/from-open-data-to-open-science-by-geoffrey-boulton, 7/31 (Accessed on 10 January 2020)

[6] International Data Corporation (IDC), premier global provider of market intelligence, advisory services, and event, 2020 (Assceesd from https://www.idc.com/about on 21 January 2020)

that the digital universe would reach 40 zeta bytes (ZB) by 2020, an amount that exceeds previous forecasts by 5 ZBs, resulting in a 50-fold growth from the beginning of 2010[7] which is shown in figure 1(b). That would be equivalent to 5,200 gigabytes for every man, woman, and child in 2020.

Latest IDC forecast says, by 2025, worldwide data will grow 61% to 175 zeta bytes, with as much of the data residing in the cloud as in data centers[8].

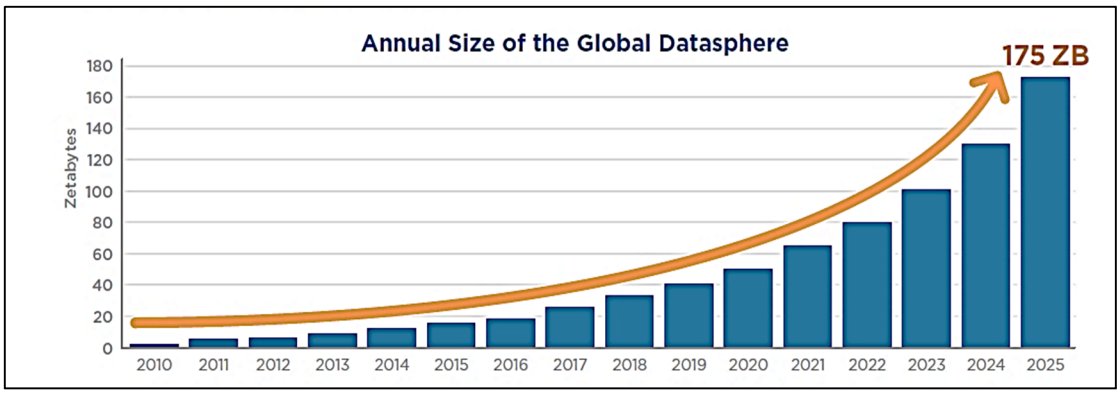

Figure 2: IDC's data prediction up to 2025

Source: https://www.csa.gov.sg/singcert/publications/cloud-security (Accessed on 14 July 2020)

Sources of Big Data

Traditionally, data is available in every aspect of human be it personal, social and professional life. Organizations, nations or international institutions produce data of various kinds in their functioning. In the military, data is produced in the form of orders, letters and correspondence. Ledger data is produced every day in Headquarters, Directorates, Units and Installations. Hospital inventory, doctor's prescriptions, test and diagnostics of medical test equipment contain invaluable data that are often lost or under-utilized. Enormous amount of data is generated in social media that are potential for intelligence input. Online shopping, digitally maintained supply chain, administration, electronic reports and returns, computerized equipment etc. produce huge data. Satellites, scientific experiments and results of different fields and outputs of various sensors placed for various purposes are high data producing sources. These sources produce a varieties of data such as videos and audio files, photos, email, spreadsheets, PDF documents, web logs, satellite images, social data, XML data, GPS data, sensor data, mobile data,

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7 Slideshare, IDC I VIEW, THE DIGITAL UNIVERSE IN 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East, December 2012 (Accessed from https://www.slideshare.net/jyrki_m/idc-the-digital-universe-in-2020 on 21 January 2020)

8 NETWORKWORLD, DATA CENTER EXPLORER, Andy Patrizio, DEC 3, 2018 (Accessed from https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html on 22 January 2020)

RFID tags etc. Data, information and intelligence of the enemy could be coupled with data originated from analysis of their websites, posts, satellite links and members' use of internet and social media. Intelligence work on them can produce new striking data.

Big Data Analytics

The process of collecting, organizing and analyzing large sets of data to discover patterns and other useful information are called big data analytics. In business world, it leads to smarter business moves, more efficient operations, higher profits and happier customers. Big data analytic tools facilitate the examination of large amounts of different types of data to reveal hidden patterns and correlations that are not otherwise easily visible. Some major IT companies like LinkedIn, Twitter, Facebook, and Google have established the groundwork for massive data collection and analytic architectures. The fastest growth in spending on big data technologies is occurring within banking, healthcare, insurance, securities and investment services, and telecommunications. Within them the financial sector is mostly benefited which has many particularly strong use cases for big data analytics, such as fraud detection, risk management and customer service optimization. The advances in analyzing big data allow us to decode human DNA in minutes, find cures for cancer, accurately predict human behavior, foil terrorist attacks, pinpoint marketing efforts and prevent diseases.

Big data would change the way we manage, analyze and leverage data in any industry and organizations. Big data analytics can help organizations like Bangladesh Army to better understand the information contained within the data and will also help identify the data that is most important to the organization and future organizational decisions. Some general benefits are as follows:

a. **Better Explanation of Events**. Organizations of advanced countries including their Armed Forces adopt a full range of big data analytical capability. They can discover what is happening, determine why it is happening, predict what is likely to happen and prescribe the best action to take.

b. **Efficient Decision Making**. Big data analytic can trace happenings on ground and correlate them with past events, rules and procedures. Big data analytical software frameworks for distributed storage and processing and in-memory analytics like Hadoop[9] can combine and analyze new sources of data with great speed. This capability provides businesses ability to analyze information immediately and make decisions based on what they have learned.

c. **Reducing Cost**. Big data technology such as Hadoop and cloud-based analytics can find efficient and cost effective ways for storing large amounts of data and cost effective solution to problems like reducing treatment and investigation cost for patient.

[9] Apache Hadoop, 2006-2019 (Accessed in https://hadoop.apache.org/ on 05 January 2020)

d. **New products and services**. Big Data is used to better understand customers and their behaviors and preferences. Continuous monitoring on customer demands and trends with the help of big data companies, organizations are getting a more complete picture of their selling trends, customers' needs, requirements for new products or system in order to create predictive models.

e. **Real Time Mission Critical Service**. Fast and timely analytics of data is a key factor for success in many business and service domains including military. Missile guidance, tactical battle decisions, air operations etc. need real time data processing and feedback to commanders or system on ground.

Many countries like the UK, the USA, China, Russia, India etc. make use of big data for their government and military. Former Indian Army Chief General Bipin Rawat said "The armed forces are the repository of big data and there is a need to record and institutionalize the information and carry out predictive analytics using Artificial Intelligence (AI)."[10] The U.S. has set up a Strategic Data and Analysis Office (SDA) in March 2018 to aid decisions such as furnishing supplies to proposed deployments by examining data from previous deployments of the Defense Logistics Agency.

BIG DATA FOR BANGLADESH ARMY

Commercial data analytics has revolutionized the operational strategy of the largest companies in the world. There are now numerous opportunities to adapt civilian technological solutions to meet the requirements of the defense sector. It can be applied in all the fields to understand, organize, plan, execute, correct and continuously evaluate the organization and performance. Covering every aspect is beyond the capacity of this writing. But some of the striking area can be illuminated with big data analytic.

Healthcare in Bangladesh Army

Sound health of a soldier is the core element for combat fitness and readiness. Bangladesh Army healthcare system is well organized to provide services to a large number of active servicemen, retired personnel and family members both in peacetime and war. Yet, it struggles to cope with a number of challenges:

a. Doctors and staff are at time hard pressed to cope with huge number of patients. Thereby, treatment gets delayed or less attention is given.

b. Different healthcare data are not so organized as to assist making better decisions. Patient health record, all diagnosis and imagery data, medicine data, doctors

[10] The Economic Times, Business News› News› Defence (Assessed in https://economictimes.indiatimes.com/news/defence/armed-forces-repository-of-big-data-need-to-carry-out-analytics-using-ai-army-chief /article show/64468837.cms on 11 January), Front page

and staff data, demographic data etc. are not linked in a way to make comprehensive decision.

c. CMHs at different locations make documentations and records locally. No comprehensive database linking meaningfully is in place.

Big Data healthcare analytics could leverage the huge load on CMHs, reduce the costs of treatment, predict outbreaks of epidemics, avoid preventable diseases and improve the quality of life in general. Big Data healthcare analytics refers to collecting, analyzing and leveraging consumer, patient, physical, and clinical data that is too vast or complex to be understood by traditional means of data processing. Some of the big data examples in healthcare that already exist elsewhere in this sector can be adopted in Bangladesh Army are discussed below:

a. **Better Decision for Treatment**. The goal of CMH or medical service is to help doctors make data-driven decisions within seconds and improve patients' treatment. When big data would be used despite geographical location, patient's history will be available to doctors from any CMH, Field Ambulance, clinics or MI rooms. These data especially for patients with complex medical histories, suffering from multiple conditions would immensely help doctors to make accurate and timely prescriptive decisions. New tools would also be able to predict critical patient beforehand who is at risk of diabetes or special diseases. They can be advised to make respective precautions as the cases demand like additional screenings, weight management etc.

b. **Electronic Medical Records (EMRs)**. Every patient of CMHs, MI Rooms, CWC, and Medical Centers etc. should have the access to the central digital record which includes medical history, laboratory test results, allergies, demographics, etc. Doctors or appropriate data entry operators can see the record anytime and modify after any new data appearing reflecting his/her sick reporting, admission, medicare etc. EMRs can trigger warning against members/units of the Army on routine medical checkup and reminders when a patient should get a new lab test or track prescriptions to see whether a patient has been following doctors' orders. Presently, some CMHs have workable database which with little effort can be migrated to big data platform for advanced level of analysis.

c. **Patients Predictions for an Improved Staffing**. Improved stuffing means appropriate staff in appropriate time curving over or understaffing creating under-utilization and poor service respectively. Big data can help solving this problem in a predictive way. Hourly/daily or monthly predictions of how many patients are expected to be at each CMH/medical installation can be made using data from a variety of sources. "Time series analysis"[11] techniques on hospital admissions records can allow the researchers to see relevant patterns in admission rates. Then, they could use machine

[11] Time Series Analysis for Forecasting Hospital Census: Application to the Neonatal Intensive Care Unit, 04 May 2016, (Accessed from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4941839/ on 13 July 2020)

learning to find the most accurate algorithms that could predict future admissions trends. An easy interface may be designed to be used by doctors, nurses and hospital administration to forecast visit and admission rates for the next 15/30 days. DGMS or medical branch then can use this prediction to shift and adjust manpower as applicable.

d. **Telemedicine and Real-time Alerting**. Bangladesh Army introduced on call doctor system for providing healthcare up to patient's current location instantly. This great service can be enhanced with the help of big data. Doctors can have access to patient's database immediately and use other means of audio-visual gadgets like online video conferences, smartphones, wireless devices etc. to assess patient's problem and provide prescriptive suggestion. This would make on call and telemedicine more effective and popular.

e. **Identifying Weakness, Faults and Trends.** Whether a particular patient's treatment failure is due to the negligence of doctors and staffs or faulty medicine or negligence of the patient can be identified by big data analytic. A soldier's sick report tendency can be recorded accordingly and with previous records, he can be treated carefully. Faulty equipment, sensors, analyzing machine etc. can also be identified automatically with appropriate data analytic tool observing and comparing their long time data records.

Intelligence Gathering

Intelligence is at the heart of all defence planning and implementation. Today, heterogeneous types of information demand special capability for sorting to make conclusive intelligence. Traditional intelligence gathering includes splitting up of teams in the field, gathering information, returning to base and writing reports. Big data analytic can strengthen all these steps and quickly make intelligence. Big data analytic by processing this information into intelligence can link all current information with historical data and bring better insights. After the September 11 attacks, United States intelligence agencies integrated disparate pieces of data by experimenting with big data analytic technologies, such as Hadoop and graph databases. This provided field commanders better intelligence.

Bangladesh launched "Bangabandhu Satellite-1" on 11 May 2018 and entered in the era of own satellite communication. By 2030 and beyond, Bangladesh Army is likely to use more drones and satellite. Used for spying mission, a single MQ-9 Reaper drone collects data that is equivalent to data of 20 laptops[12]. The US ARGUS ground surveillance system collects more than 40 Gigabytes of information per second[13]. Spy satellites deployed by countries like the US also generate gigabytes of geospatial data. Reapers and Predators also have 12 cameras which are

[12] Big Data and Analytics for National Security (Accessed in http://web.stanford.edu/ group/mmds/slides2012/s-fahey.pdf on 01 January 2020)
[13] Ibid

attached to them to record video every second[14]. Enormous amount of data can be found from the analysis of the use of internet and social media both by friendly forces and enemies. Intelligent sensors, spy cameras, other intelligent electronic gadgets provide invaluable data. To make better intelligence from these vast amount of data, big data analytic is needed.

Using Big Data in Military Operations

Big data analytic can depict real time situations with easy interfaces using multiple data sources in combination. For counter terrorism operations, counter insurgency operations and covert operations, these analytics may provide firsthand information to decide best course of action in the field. Tactical commander needs better data-processing tools to find out conclusive facts to precisely identify threats, accelerate mission readiness, and ultimately achieve mission success. During mission analysis, strategic decision making or operational environment selection at higher level, in-depth analysis of big data can provide useful insights.

South Korea is considering employing big data solutions to forecast enemy threats and strengthen its defense readiness. Their Deputy Minister for Planning & Coordination Hwang Hee-Jong said "This year, we are planning to set up a system to analyze defense-related big data and introduce advanced information and communication technologies in the defense sector to cut costs and enhance deterrence capabilities[15]". To extract insights from big data, Defense Advanced Research Projects Agency (DARPA) announced a $2 billion investment in accelerating AI integration into the U.S. warfare platforms in 2018.[16]

Often Bangladesh Army is called for counter terrorism operations in CHT or elsewhere. Tactical mission teams can take intelligence from big data analytics before operation and update later for future teams. Big data analytic at the tactical edge can support new capabilities that identify threats, predict enemy behavior, optimize logistics, and protect military networks from cyber-attacks, augmenting human capability that enhance overall ability to achieve Forces Goal 2030.

Administration & Economizing Resource Using Big Data in Army

Use of big data can present smooth unit administration. Soldier's discipline, training, ration, leave, clothing, documentation, etc. may be linked to the central dataset of Bangladesh Army and each unit can use, maintain and update it. Their activities in the unit, social network, and various statuses can be automatically monitored with suitable AI algorithm or machine learning algorithm to make decision. Similarly, formations, installations, schools and training

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14 Ibid

15 Defenseworld.net, Big Data To Help South Korea Forecast Enemy Threats, 09 February, 2017, (Accessed from https://www.defenseworld.net/news/18431/Big_Data_To_Help_South_Korea_Forecast_Enemy_Threats#.Xw2lGOdxXIU on 13 July 2020)

16 The big data battlefield, Richard Whaley, August 9, 2019(Accessed in https://militaryembedded.com/ai/big-data/the-big-data-battlefield on 02 January 2020)

centers will create programs for their administration that cover their reports and returns, parade state, activities, training, budget etc. in an automated way. At Army Headquarters level, different Directorate, Wings, Inspectorate etc. can create smart programs/algorithms to work for them for using central dataset to plan, implement, monitor, and correct everything automatically. Smart access control system using big data can enhance security at all level. When considerable work can be done with these technologies empowered by big data analytic, workload in many fields can be shifted on to the machine, smart weapon systems and smart technology driven management systems. Thus, overall capability of the Army would be enhanced meeting our Forces Goal 2030.

IMPLEMENTING BIG DATA

Security Measures and Challenges to Implement Big Data

Traditional Database Management System (DBMS) cannot process three types of data namely structured, semi-structured or unstructured data simultaneously. Technically, implementing big data needs different approach than handling traditional databases e.g. Hadoop file system. Yet, big data infrastructure can co-exist and function along with all databases that are operated and managed using traditional DBMS and hardware in data center. AHQ datacenter, optical fiber supported network up to all distant cantonments and distributed IT assets procured over the years made our physical IT infrastructure stronger. On top of it, some software with respective databases runs efficiently. We may utilize this infrastructure and existing databases for big data analytic simultaneously. Initially we will need some minimum number of skilled people trained on big data. Expertise on some other cutting edge technology like machine learning, artificial intelligence etc. would be required to get optimum results. Dedicated and tireless hours are needed to make the mindset for this data handling paradigm shift.

Strict security precaution should be a concern right from the outset. Primarily, most of the data would be from inside the organization where traditional security policies and measures are applicable. During the collection, interfaces should be planned and placed in a way to avoid detection. Sensors, GPS, tools should be placed carefully so that data is not intercepted by the enemy or unauthorized persons. Software chosen should be free of backdoors, malware, spyware or viruses. Strict firewall should be in place to keep the network secure. Cloud-computing based storage and analysis should be avoided. Persons employed in this organogram should be absolutely loyal, dedicated, and hardworking. Vetted persons can be employed. Getting continuous strategic guidance and vigilance from higher HQ is essential while collaboration with industry, academia and experts is a must like other countries necessitating it to be near the AHQ.

Starting Towards Big Data

There is a great opportunity for utilizing available personnel, technology and hardware to make a humble start. Hiring expertise of other technology major companies, institutions, universities would be worth. Today Bangladesh Army is increasingly filled with young tech savvy personnel who are ready to take on new challenges through technology. Armed forces of

India and China have realized the need for such technology and are quickly adopting the trend of developed nation's armies. We can follow that strategy as a beginner. Initial utilization of commercial products can be followed up with in-house R&D. IT directorate has an ad-hoc "IT Development and Support Cell" can take initiative to start a humble beginning.

Creation of databases

There are number of choices to select database for big data like Apache Hadoop, Apache Kafka, Cassandra, HBase, MongoDB etc. Selecting the appropriate one depends on many factors. But creation and maintenance of numerous electronic databases with information of serving and retired personnel, their family members and Army civilian employees is the primary requirement. Respective fields will have to make database accordingly. Database and analytical software will need different file and storage system than the traditional file system. Hence storage, network and other hardware may not be shared. A small part of the hardware can be utilized initially and gradually expanded.

Creating Infrastructure

Infrastructure is based on the four things for four main activities:

a. Collection of data - Tools and agents

b. Storage of data - Software systems and physical storage media that store it

c. Transfer of data – A robust network

d. Analysis of data and output - Application environments hosting analytical tools that analyze it and the backup or archive infrastructure

Varieties of data may come from the office clerks, officers, operators from different places, sensors which could sit in devices, machines, buildings, or on vehicles, packaging, or anywhere else. Different software applications will generate user data and CCTV video, beacons, and opponent website. Each demands different setups as applicable. Depending on data type, infrastructure for capturing data will be established. With a little effort, Bangladesh Army can set many of these systems and can invite a capable data company to set up the systems and capture the data on their behalf.

The main storage options include a traditional data warehouse, a data lake, a distributed storage system, and server or a computer hard disk. For storing and analyzing a large amount of data, a more sophisticated, distributed system like Hadoop may be appropriate. Cloud-based storage is a brilliant option for most businesses but for security issue, Bangladesh Army can go for own storage. Data analysis is all about turning data into insights where programing languages and platforms come into play. Software vendor giants like IBM, Oracle, and Google can provide software to support three basic steps in this process like preparing the data (identifying, cleaning and formatting the data so that it is ready for analysis), building the analytic model, and drawing a

conclusion from the insights gained. Definitely Bangladesh Army will have to make own software suitable for particular need later. In data output part, the insights from analyzing the data are passed on to the people who need them, i.e. the decision makers.

For Bangladesh Army, it is possible to start from a local architecture where a semi-cluster can be established to assess feasibility and proof the concept. More complex structures like a full scale cluster can be established progressively. On getting momentum, big data analytic can expand to more areas as discussed in this paper. The foremost requirement now is the will to implement with minimum number of skilled person. Discussion in the form of seminar, study period, conference can be arranged to generate consensus. Skilled manpower may be trained on essential technologies by arranging short and medium level courses. Later, a permanent organogram would be needed like the advanced Armies of the world. The organizational structure for advance research on big data, data science, machine learning, artificial intelligence, various Natural Language Processing Systems etc. is also an important step forward which would boost the advancement towards vision 2030.

Conclusion

In this writing, a brief introduction of big data is presented to generate a consensus for implementing big data analytic in Bangladesh Army. Big data is defined as an enormously large database that cannot be processed with traditional data processing software and techniques. A wide range of sources of data are available. It extends from Army units reports and returns, parade state, medical, demographic to members' use of social media, internet and website analysis of own and enemy and so on. The process of examining and interrogating big data sets is big data analytics which can derive insights for decision making.

Bangladesh Army established a strong physical network infrastructure covering all its installations. Its data center is currently providing different isolated services using both internet and intranet which has small size database. Some sectors of Bangladesh Army can start big data analytics to provide better services, healthcare, intelligence and administration to revolutionise the way we do our job now. Big data analytic can be utilized in tactical, operational and strategic levels of war as well. In a nutshell, these data analytic can be a force multiplier by assisting Army to overcome shortage of manpower, organize works, identify weakness and strength etc.

There are limitation and challenges to implement big data. But it is a need of time and essential for future warfare and administration. We must be proactive to incorporate cutting edge big data analytic and associated technology like machine learning, artificial intelligence etc. A humble start can be with available commercial resources followed by own R&D. Required databases may be designed and data collection can be comprehensive covering official documents, demographic data, hospitals and diagnostic data, website and social media data and any other source. Data collection, data storage**,** data analysis and data visualization or output are four operations to establish big infrastructure which can be done independently and simultaneously by respective work group /taskforce to expedite the event. Existing IT engineers,

technician can be given short training on big data to commence and all sub-section can train them as time progress. Advanced training can be arranged then to further develop the analytic and make R&D.

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CRITICAL THINKING: A DECISION MAKING TOOL

Brigadier General Md Mainur Rahman, SUP, awc, psc

Abstract

Military leaders need to be clear thinkers. As a subject, deliberate and methodical thinking often remains outside our intellectual horizon and fails to find a place in our leadership training curricula. The reason may be simple: as the supreme creation of Allah, we take our ability of rational thinking for granted. But numerous research has proven this assumption to be grossly flawed. Historically, human race has evolved in an alien and hostile environment where quick decision making was a prerequisite for survival. Our genetic code has not changed much since then. Very often, we fall prey to quick thinking and cognitive shortcuts without even understanding. But such hasty thinking can hardly, if ever, lead to correct decisions. Thus, a deliberate, conscious and methodical application of thinking process is required for sound judgment and decision making. This process, known as critical thinking, can only be learnt through training and practice. A general model can be used for development and application of critical thinking skills. The mind should be trained systematically to evaluate inputs, understand implications and closely examine any assumptions and inferences made before making decisions. And while doing so, one must guard against cognitive shortcuts, biases and logical fallacies. Apart from developing individual skills, it is also imperative to create an organizational environment that promotes critical thinking and candid exchange of ideas. Bangladesh Army is reputed for its professionalism; better thinking skills can definitely take it a step further.

Keywords: Leadership, critical thinking, decision making, evaluation, assumption, inference, implication, bias, logical fallacy.

Introduction

Bangladesh Army is well-reputed for its professionalism. It has earned lot of acclaims internationally by its praiseworthy role in conflict-ridden areas under the UN mandate. Undoubtedly, well-trained leaders have been the kingpin behind this success. The training curricula of our military academies and institutions meet global standards. Besides services-specific trainings, utmost importance is attached to leadership training – and very rightly so. Officers are introduced to leadership theories in the military academies, and advanced training continues until they reach the mid-career level, sometimes even beyond. But ironically, the art of thinking has largely remained overlooked as a subject in our training curricula. No doubt, leaders need to be clear thinkers. Thinking skills are definitely a prerequisite for successful leadership, and the same is presently acknowledged worldwide. Terms such as critical thinking, systems thinking, innovative thinking are buzzwords and commonplace topics of modern world today: be it military or corporate.

Critical thinking is the fundamental building block to all other thinking skills, and can definitely be considered as a great aid to decision making process. It basically helps a leader improve his judgment and decision making. Simply put, critical thinking is the deliberate,

conscious and appropriate application of reflective skepticism to improve decision making[1]. This paper aims at introducing the concept of critical thinking in a broad-brush approach. The critical thinking model presented subsequently is used in training curricula of the US Army War College. Besides, some scholarly works on critical thinking has also been consulted and duly referred. The sole purpose of this effort is to kindle interest about the subject, so that the leaders of our armed forces can draw benefit from this generally unfamiliar concept.

Critical Thinking Model

Before delving into the model, it may be appropriate to look at a formal definition of critical thinking. Diane Halpern suggests; 'critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is purposeful, reasoned, and goal directed'[2]. The word critical can be misleading, as some may interpret it as merely 'fault finding'. But that's not what critical thinking is about. The word 'critical' implies purposeful, reflective and careful evaluation of information as a way to improve one's judgment[3].

The figure below describes a general model for development and application of critical thinking skills. This model is a derivative of Paul and Elder model, and is proposed by professor of behavioral science Stephen J. Gerras, primarily for the use of US military leaders[4]. A careful examination will reveal that the model is not meant to be linear or sequential. Instead, it is mostly an interactive process. The two way arrows in the critical thinking loop indicates that one can return to previous steps whenever necessary. Besides, the clouds in the centre (point of view, assumptions and inferences), with multiple arrows connecting various steps, are meant to demonstrate that this is generally a non-linear model.

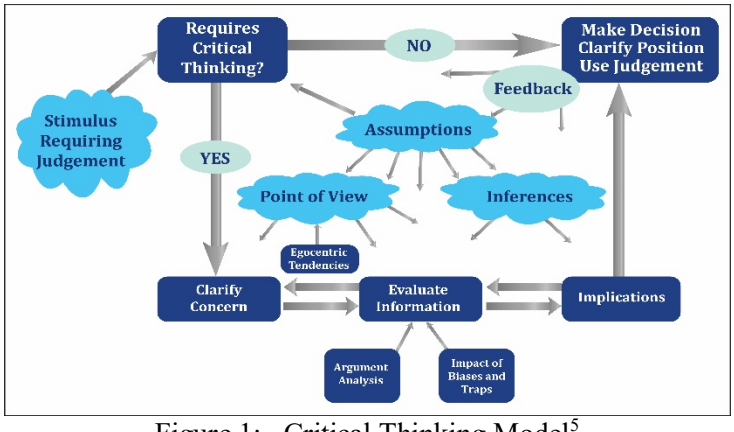

Figure 1: Critical Thinking Model[5]

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1 Colonel (retired) Stephen J. Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," (August 2008), C 3.
2 Ibid.
3 Ibid.
4 Ibid., C 4.
5 Ibid., C 7.

The process begins with a simple decision so as to whether an issue merits deliberate thinking or not. Thinking takes much more effort and energy than we usually perceive. Human brain is a voracious energy consumer – it drains out 25 per cent of body's energy during rest, and much more when made to work hard[6]. Fortunately, most of the decisions we make on daily basis do not require critical thinking. Going for a routine drive, performing household chores, or getting ready for a party do not normally require critical thinking and can be made in 'automatic' mode of cognitive thought[7]. Sometimes, tasks can be performed by habit – with no thought process involved at all. In a renowned experiment with a person who lost his ability to remember, scientist Larry Squire had shown that he could perform routine activities like taking an afternoon stroll in the neighborhood based on sheer habit with no memory at all[8]. It may be reasonably concluded that majority of the decisions we make every day are routine decisions that do not require critical thinking. But this provokes a harmful tendency – sometimes decision makers make judgments on important issues using 'automatic' mode instead of applying deliberate cognitive thought process. Thus it is important to make a careful judgment when deciding on whether an issue demands critical thinking or not. Should there be any doubt, a safe approach can be to channel the issue through detailed cognitive thinking process.

Once it has been identified that an issue needs critical thinking, the next step is to 'clarify concern.' This can basically be considered as a summation of two aspects – purpose and central problem[9]. The central problem being the key needs to be identified at the outset. This is easier said than done, as the complexities of the problem may not be easily identifiable. A military commander trying to solve an insurgency problem solely by military means may be missing the root cause altogether. As such, the problem should be periodically revisited, and as the diagram suggests, should be appropriately modified if necessary. Similarly, the purpose of the whole exercise should also be clearly understood. A phrase often asked by leaders to address this is, 'what are we trying to accomplish here (e.g. in a meeting, during a situation, etcetera)?[10] This exercise is important to make sure that the scope is correct and without much ambiguity.

At this stage, it is relevant to discuss about the three 'clouds' situated at the center of the model – point of view, assumptions and inferences – as these would impact the entire process (as suggested by the arrows in the model). Possibly the most important amongst these elements is the point of view. Every individual person has a point of view about how the world works – and this is shaped by the environment around him. A person's childhood, parental upbringing, schooling and education, neighborhood, race, religion, society and culture, nationality – everything can influence and shape his point of view. We tend to see the world through our own lenses. More importantly, we consider our point of view as correct, thinking that we have figured out how the world works. More we grow in rank, position and stature, more confident we tend to become about the correctness of our point of view. But this is a serious impediment to critical thinking,

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6 Yuval Noah Harari, *Sapiens, A Brief History of Humankind*, (London, UK, Penguin Random House, 2011), 9.

7 Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," C 5.

8 Charles Duhigg, *The Power of Habit*, (London, UK, William Heinemann).

9 Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," C 6.

10 Ibid., C 5.

because it tends to completely disregard the perspectives of others. A critical thinker (more so a good human being) needs to understand this aspect, be aware and guard against his own biases and egocentric tendencies. Besides, he must be open to other point of views – even to completely contradictory perspectives. A critical thinker, while listening to a person's point of view, should try to discern his egocentric tendencies and biases. Putting oneself in the shoes of another person is great quality for a leader and critical thinker.

Next cloud is 'assumption', the dictionary meaning of which denotes a belief that something is true, although there is no proof. We take assumptions for granted and usually never question the validity of our assumptions. A snake is assumed to be dangerous, despite the fact that only 20 per cent of this reptile family is actually venomous, while majority are completely harmless. In military, we have assumptions about overweight soldiers, physically weak persons, and so on. These are referred to as mental models, which can affect our judgment. The arrows in the model show how assumption influences many aspects of the model: point of view, inferences, and even in deciding if an issue is worthy of critical thinking or not. It is therefore very important that a critical thinker understands the assumptions he makes and learn to question those freely. In fact, a leader should create a command climate where everyone is free to question all the assumptions and accept or discard them as appropriate. In his epic work 'The Fifth Discipline', Peter Senge points out the importance of dialogue, as opposed to discussion in a learning organization. He suggests, 'In dialogue, a group explores complex difficult issues from many points of view. Individuals suspend their assumptions but they communicate their assumptions freely'[11]. Such a climate, where individuals can discuss and question each-others assumptions, is extremely important for critical thinking process.

Now we can focus on the last of the three clouds in the center – inference. An inference is a step of the mind, by which one concludes that something is true in light of something else being true, or seeming to be true. Inferences are heavily influenced by assumptions. While assumptions are taken for granted, inferences are intellectual acts in which we conclude something based on a perception as to how the facts and evidences fit together[12]. If we find an overweight soldier failing in physical test, we quickly infer that he has failed due to his overweight. Such inference is drawn from the negative assumption we carry about overweight soldiers (and logically so). But in reality, the individual in question may be a champion weightlifter – equally good in physical efficiency test – but had fallen ill on that very day. A leader must be aware of the inferences he makes, and foster an environment where inferences are subject to scrutiny.

Back to the linear model, the step following 'clarify concern' is evaluation. Evaluation is the systematic determination of a subject's merit, using some standard sets of criteria, which can assist in sound judgment and decision making. This is definitely one of the more important and complex steps of critical thinking process. Here, a critical thinker needs to assess the validity of concepts, information, evidence and data. This is something most of us are familiar with, as we need to evaluate inputs on a regular basis. But in so doing, we must understand the impact of biases, traps and logical

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11 Peter M. Senge, *The Fifth Discipline*, (New York, USA, Crown Business, 1990).

12 Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," C 12.

fallacies on human mind. These are lexicons describing tendencies that blur and distract our sound judgment. These are great evils to critical thinking, and are discussed subsequently in further details. Besides, in the military, we follow a prescribed decision making process wherein a few aspects are taken for granted. We assume that the problem is clearly definable, all required information are available, all options are evaluated and there is adequate time at hand. But in reality, oftentimes decisions are made under high pressure, short timeframe, inadequate information and uncertain environment[13]. Under such constrained conditions, biases, traps and fallacies can creep in further and have considerably more adverse impacts.

That brings us to the last component of the model – implications. The critical thinkers obviously need to appreciate and foresee the short and long term consequences of their decisions. And often these consequences and implications are not readily visible. Many large organizations can be considered as complex systems, with many sub-systems within them. In such organization, a decision can have 2nd, 3rd or nth order effect, the implications of which are extremely difficult to predict, especially in the short term. Systems thinking is thus, within itself, a separate discipline altogether. Besides, this step is not only about predicting future. Critical thinking is a process of reflective skepticism, and this is where it becomes most visible. While considering implications, all concerned need to revisit the inferences and assumptions, and make sure those are logical and unbiased.

Finally, we should not lose sight of the feedback loop built within the model. Once a decision is made, a critical thinker should always seek for feedback and should it be necessary, start the thinking process all over again. More interestingly, even if the initial decision on particular issue suggested an instant decision without travelling through the long 'yes' loop, the feedback may suggest such a decision to be wrong. In that case, the issue should be re-routed through the difficult journey of critical thinking loop, and a fresh decision be made as appropriate.

Cognitive Errors: Biases and Traps

In his seminal work 'The Art of Thinking Clearly', Rolf Dobelli has penned down a list of ninety-nine cognitive errors. The failure to think clearly, or what Dobelli calls a cognitive error, is nothing but a compilation of biases, heuristics, traps, effects and fallacies. Cognitive error creates a systematic deviation from logic – from optimal, rational, reasonable thought and behavior[14]. These errors, instead of causing occasional impediments to our thinking process as we may think, are very regular and frequent. As the list of such biases and fallacies are very long, only few important ones (ten, to be precise) are highlighted here.

Biases and Traps

Self-Serving Bias Self-serving bias suggests that we are likely to attribute our successes to ourselves and failures to external causes[15]. When a child is asked about the secret behind his good academic grades, he would invariably attribute the success to his genius and merit. But when he

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13 Ibid., C 13.

14 Rolf Dobelli, *The Art of Thinking Clearly*, (London, UK, Sceptre, 2013), 1.

15 Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," C 18.

achieves poor grades, he will find out some external excuse – for example, the lessons were not well-covered by the teacher. This is an egocentric issue, and it can possibly explain why we find it difficult to say 'I am wrong'. This is a very common tendency not only to individuals but also in organizations. That is the reason why average organizations look outside and find some external factor for their poor performance. On the contrary, good organizations look inwards to find the real cause and achieve self-correction. A critical thinker needs to guard against this tendency.

Fundamental Attribution Error We often draw conclusions about what 'type' of person one is basing on what a person does. But this is a faulty judgment as it does not take the environment and circumstances into consideration. A soldier is considered ill-disciplined if he is late to return from leave. But the individual could have a perfectly acceptable reason for joining late. Basing on very little evidence, we brand people as 'lazy', 'dodger', 'task-master' – and the list can go on and on. Interestingly enough, when we are late, we invariably attribute it to external causes beyond our control, thanks to self-serving bias.

Confirmation Bias People tend to seek confirmatory information for what they think is true and avoid or discard information that is contradictory to their beliefs. In other words, we filter out information that contradicts our beliefs. As Warren Buffet puts it, 'what the human being is best at doing, is interpreting all new information so that their prior conclusions remain intact'[16]. This may explain why very few people try to learn and appreciate the teachings of the religions other than their own. And this is the reason why a Leonel Messi fan may find it difficult to appreciate the brilliant skills of Cristiano Ronaldo. When we browse the internet, in-built algorithms in the system records our browsing history and tailor subsequent contents to our personal interests. Thus, google may know us better than we know ourselves. Confirmation trap can be a serious concern in organizations because it inhibits real feedback. Oftentimes, bad news is filtered out and only feedbacks those are comforting to top leadership is allowed to travel up. Such tendencies must be avoided by fostering a culture where correct feedback is encouraged.

Availability Bias The availability bias suggests that we create a picture of the world using the examples that most easily come to mind. This is incorrect, because in reality things don't happen more frequently just because it can be conceived more easily[17]. Thanks to availability bias, we overestimate the risk of dying from a plane crash, and underestimate the risk of dying from a less spectacular disease like diabetes. In reality, the possibility is much higher with the later cause. While judging the performance of two units who are literally at par with each other, we tend to grade the unit that has achieved a champion trophy in a recent games competition higher than the other. Leaders need to put in conscious efforts to fend off availability bias.

Social Proof People feel they are behaving correctly when they act in conformity to most other people around them. In other words, when the society does something, we seldom question and quickly follow suit. Social scientists trace back this human nature to our ancient hunter-gatherer

16 Dobelli, *The Art of Thinking Clearly*.

17 Ibid.

predecessors, when following the herd was the thumb rule for survival. This notion is, therefore, also known as herd instinct[18]. Social proof can explain the share market crashes. It is also an underlying force in fashion designing and restaurant businesses. One can find readily available examples in our army too. Whenever a general visits a unit, we quickly find out how other units conducted the visit, presented the brief, even arranged for the sprucing up–and adhere to the same format. If there is a new report asked by higher headquarters, we invariably make sure to check what neighboring units are forwarding. Getting over it is difficult but necessary, because a wrong thing does not become right even if everybody does it.

Logical Fallacies

While biases blur our rational thinking, logical fallacies relate to misjudgments during arguments. In the organizations, be it military or corporate, most of the decisions are taken basing on discussions with peers in groups. As such, a critical thinker should be able to assess the soundness of the arguments presented. Because like the cognitive errors, logical fallacies can also contribute to unsound decision making. We make arguments and offer reasons so that others are convinced to accept our judgment and conclusions. A sound argument must offer reasoning or logics that are relevant, consistent and related to the conclusions. If it is otherwise, the argument is likely to be fallacious. Few of the most prevalent logical fallacies are briefly explained below.

Argument against the Person Very often, we tend to own our point of views during a discussion and make it a personal affair. With an egocentric mindset, we defend our positions and in doing so, attack the person presenting the argument, instead of the argument itself. While planning an attack, a commander who strongly favours a risky frontal attack is often found branding the fellow commander with a differing view as 'soft' or 'coward'. For the sake of better decision making, leadership should consciously guard against such notions. Some of us have come across banners in the offices that say 'we don't discuss office at home'. Apart from the aspects of information security and good practice, this also hints at separating profession from personal life, i.e., not to take things personally.

False Dichotomy When someone presents a complex situation in black and white terms, i.e., presents only two alternatives when many exist, he is committing the fallacy of false dichotomy[19]. Simply put, this is an intentional oversimplification of a complex issue to influence decisions. Bangladesh Army suffers from its own version of false dichotomy. In operational decision making processes, staff officers usually come up with three options (course of actions), so designed that their favourate option holds distinct advantages. All that the commander is expected to do is nod his head in favour of the best option. Such manipulation surely proves to be an impediment in finding the best course of action.

Slippery Slope Slippery slope occurs when the conclusion of an argument rests upon an alleged chain reaction, and there is not sufficient reason to conclude that such chain reaction will

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18 Ibid.

19 Gerras, "Thinking Critically about Critical Thinking: A Fundamental Guide for Strategic Leaders," C 19.

actually take place[20]. Example of a slippery slope argument may look like this: 'if drugs are legalized, then it will be a normal thing in the society and all the teenagers will be addicted in drugs. Gradually, everyone will be taking drugs and the society will be ruined. So, drugs should not be legalized.' Keeping our opinion about drugs apart, this is a slippery slope argument. Marijuana is legalized in Canada, and society there has not been ruined anyway.

Groupthink Decisions are often taken in groups, and it has been found that individuals often behave differently in a group than they would when acting alone. While working in a group, people often hide their dissents and misgivings by 'self-censorship' and adhere to group decisions due to social pressure[21]. Nobody wants to be the devil's advocate by airing a different opinion. Instead, they value their relationship and group comfort. As a result, the decisions reached are often far from ideal. This can be further reinforced by the desire for appeasing seniors in the group – and unfortunately this tendency is more pronounced in the military. Groupthink is a serious evil, and all concerned need to be acutely aware of this tendency and devise measures to guard against the same.

False Causality Human mind is prone to cause-effect relationships. If two events occur together in close proximity of time and space, we tend to conclude that the first event caused the second. But in reality, there may not be any causal relationship. Thus it must be remembered that correlation is not causality. Besides, what is presented as cause may turn out to be an effect and vice versa[22]. We can find many examples of false causality in our everyday military lives. Take an example: an armoured unit produces many drill instructors for training institutions, because it is champion in formation drill competition for seven years in a row. Sounds logical, but a closer examination may make us think twice. In reality, the pool of excellent drill instructors always available in the unit is the prime reason behind its enviable success. What complicates false causality further is the fact that there can be many causes behind an effect, and some of them may not be readily visible.

Conclusion

Our biological name, *homo sapiens,* literally means 'wise man'. The name is justified, because human brain is about six times larger than any other animal of comparable size, and it is capable of doing astounding things[23].[i] Intelligence implies ability to think. Naturally, as *homo sapiens,* we take our ability to think for granted. But it should be evident by now that the process of thinking is far more complex than we usually understand. Nobel Laureate Daniel Kahneman suggests – much in line with what has been discussed so far – that basically two types of thinking exist. The first kind is intuitive, automatic and direct. The second type is conscious, rational, slow, laborious, and logical. Unfortunately, intuitive thinking draws conclusions long before the conscious mind does[24]. Many historians and social scientists suggest that humans are more prone to the intuitive, quick thinking because they are genetically programmed as such. During the

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20 Ibid., C 21.

21 David Patrick Houghton, The Decision Point, (New York, Oxford University Press, 2013).

22 Dobelli, *The Art of Thinking Clearly,* 83.

23 Harari, *Sapiens, A Brief History of Humankind*, 9.

24 Dobelli, *The Art of Thinking Clearly*. (conjunction fallacy), 91.

hunter-gather lifestyle spreading over few hundred thousand years before agricultural revolution, it was this quick intuitive thinking that kept the human race alive. When a person saw his peers suddenly dashing for safety, he quickly followed them. If he did otherwise, he was eaten by a sabre-tooth tiger or got stampeded by a herd of mammoth.

Critical thinking, therefore, is not our basic instinct, and requires deliberate effort. But it is important for leadership – military or otherwise – to master this skill because it results in better decision making. The US Army model presented here should merely serve as a guideline. We all are prudent enough to generate our own mental models. The key is to train our minds to systematically evaluate inputs, and avoiding cognitive shortcuts. And while doing so, one must keep the famous maxim 'know thyself' in mind – to guard against own point of views, biases and logical fallacies. Besides, the leadership should develop a climate in the organization that fosters the culture of sound and participative decision making. The value of feedback is enormous, but often overlooked. Honest and constructive feedback can pay rich dividends, and this must not be lost sight of. Bangladesh Army is reputed for its breed of professional military leaders. Knowledge on better thinking skills can definitely take them one step further. As such, it is expected that critical thinking, as a subject, will arouse interest in some of our professional officers for further exploration and practice.

Brigadier General Md Mainur Rahman, SUP, awc, psc was commissioned on 21 June 1991 with 24 BMA Long Course in the corps of infantry. In his eventful career, Brigadier General Mainur has served in various command, staff and instructional appointments. He has commanded two infantry brigades including one in Chattogram Hill Tracts. As a staff, he has served as the Brigade Major of Headquarters 203 Infantry Brigade in Khagrachari. As instructor, Brigadier General Mainur served two tenures in tactics wing of School of Infantry and Tactics and also as a directing staff of Defence Services Command and Staff College, Mirpur. The officer has undertaken two UN peacekeeping missions in Sierra Leone and DR Congo. As a senior staff, he has served as the Assistant Military Secretary to honourable President of Bangladesh. Presently, Brigadier General Mainur is serving as the Director of Weapons, Equipment and Statistics Directorate in Army Headquarters.

APPLICATION OF THE THEORY OF LEVELS OF WAR IN FIGHTING THE ASYMMETRIC WARFARE: BANGLADESH PERSPECTIVE

Major Md Raqibul Islam, psc, Arty

Abstract

Conventional military war is prosecuted through three levels of war. These are doctrinally termed as strategic, operational and tactical levels of war. The concept of these levels of war was originated from the conventional wars of Napoleonic era and beyond, when classical military theories started to evolve. However, warfare today has entered into its fourth generation through a dramatic shift. Today conventional war has reduced. On the contrary, irregular warfare has proliferated. Right at this moment, for example, no state army is fighting another but many are involved in fighting terrorists, insurgencies and violent non-state actors which are commonly termed as asymmetric threats. Threats of such nature having asymmetry in strength, resources or tactics gave rise to a complex form of warfare named as Asymmetric Warfare. Following the global trend, Bangladesh Army and other law enforcing agencies are also engaged in Asymmetric Warfare. As Asymmetric Warfare has grown to be the main stay of modern warfare, therefore, we need to ascertain how this new form of warfare can be fought through the three conventional levels of war. At this context, the paper first discusses the theory of levels of war and the nature of AW. Having done so, the paper attempts to define the levels of war in AW. At the end, the paper analyzes the asymmetric threat environment in Bangladesh and seeks to outline a holistic approach for fighting the AW through the three levels of war. Although asymmetric threats may include varieties of dimensions, the paper will focus the discussion within the domain of non-state actors and terrorism as asymmetric entity. The discussions will also remain restricted within the army and concerned law enforcing agencies only, leaving aside the other two sister services.

Keywords: Levels of war, asymmetric war, conventional war, non-state actors, interstate conflict, operational level.

Introduction

The 'levels of war' is one of the principal parameters of classical military theory. A war is prosecuted through three distinct levels such as strategic, operational and tactical. They encompass the entire spectrum from conceptual to execution of war on ground. However, classical military theories are the constructs of conventional war while warfare today has entered into its fourth generation comprising multifarious irregular forms of warfare. Right at this moment, for example, no state army is fighting another, but many are involved in fighting terrorism, insurgency or non-state actors throughout the world.

The spectrum of irregular warfare includes insurgency, unconventional war, war against global terrorism, against non-state actors and many more of this nature. Threats of such nature having asymmetry in strength, resources or tactics gave rise to a complex form named as Asymmetric War (AW). The ways and means involved in AW are innovative and unconventional. Contrarily, the traditional military theories like levels of war or so are basically extracted from the conventional warfare. Thus, questions may logically arise whether these conventional military theories can equally be applied for the AW or not?

Notwithstanding the reality, Bangladesh Armed Forces and the law enforcing agencies are already involved in fighting the AW. However, there lacks a comprehensive approach in fighting the subject war through the conventional levels of war. Trends say AW will remain as the main stay of modern conflict. Thus, it is time to make a contemplated study on the applicability of conventional theory of levels of war in AW. Therefore, to face the AW effectively there is a need to define a holistic approach for Bangladesh Army to fight the AW through these three conventional levels.

THEORY OF LEVELS OF WAR

Evolution of the Theory

Origin of the concept of 'Levels of War' can be traced back to Clausewitz's 'On War' in 18th century that referred to strategy and tactics. From the 19th century, war started transforming from set piece battle to a series of battles and engagements over a vast time and space. Neither tactics nor strategy appeared to encapsulate the skill of the theatre commander—and hence "Operational Art" was coined to cover that which was between the two.[1] The discovery of operational level has been attributed to Helmuth von Moltke.[2]

Concept of Levels of Warfare

'Levels of war' is defined by different military practitioner in different ways although the context remains, more or less, the same. According to the Australian Defence Force Glossary, the levels can be defined as below:[3]

a. **Strategic Level**. The strategic level of war is concerned with the art and science of employing the national power.

b. **Operational Level**. The operational level of war is concerned with the planning and conduct of campaigns.

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1 Martin Dunn, Levels of War; Just a Set of Labels? Research and Analysis: Newsletter of the Directorate of Army Research and Analysis, no.10, OCT 1996, P1.

2 Michael D. Krause, "Moltke and the Origins of the Operational Art" in Military Review. Vol lxx, No 9, September 1990, pp 28-44; and Douglas A. MacGregor, "Future Battle: The Merging Levels of War," in Parameters, Vol xxii, No 4, Winter 1992-93, pp 33-47.

3 Glossary, Australian Defence Force,1994.

c. **Tactical Level**. The tactical level of war is concerned with the planning and conducts of battles.

Strategy goes beyond mere military measures. Although preparing and planning the national military power remains one of its vital elements, it is not all it is confined to. Rather it harnesses all the elements of national power including political, diplomatic, economic and others to set the base for a war and also to sustain it till the victory. "The operational level is concerned with employing military forces in a theatre of war or theatre of operations to obtain an advantage over the enemy and thereby attain strategic goals through the design, organization, and conduct of campaigns and major operations".[4] Under a campaign plan, tactics are what happens at every point where the combatants meet and fight. The three levels of war are distinct yet tend to overlap with the next one as portrayed in figure-1 below:

Figure-1: Levels of Warfare
Source: Figure 1.4 in FM 9-6 (U.S. Army, 1998)

CONCEPTUALIZATION OF ASYMMETRIC WARFARE

Evolution

Although viewed as a recent phenomenon, the concept of AW has been around for centuries in Kautilya's philosophy of 'Concealed War' and 'Silent War' or for that matter in Sun Tzu's teachings.[5] However, the use of the term 'AW' dates back to January 1975 when Andrew JR Mack published an article titled 'Why Big Nations Lose Small Wars' in which asymmetry was first referred.[6]

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[4] USAF College of Aerospace Doctrine, Research and Education (CADRE) Air and Space Power Mentoring Guide, Vol. 1, Three Levels of War, Maxwell AFB, AL: Air University Press, 1997.

[5] Lt Col Khair & the Team, Preparation of Bangladesh Armed Forces for AW, Group Research Project, Armed Forces War Course-2015, P 5.

[6] Gopal Gurung, Countering Pakistan's AW, Manekshaw Paper number 25/ 2011, Knowledge World Publishers Limited, New Delhi, 2011, P 3.

In fact, after the cold war, warfare saw the most radical change when the state lost its monopoly on war. Inter-state conflicts decreased while intra-state conflicts increased dramatically. State militaries found themselves involved more in fighting insurgents, separatists, ideological and religious entities, terrorists and non-state actors like Al-Qaeda, Hamas, Hezbollah, IS and the FARC. Such entities being inferior in strength and resources adopted innovative and unusual tactics, techniques or means to fight the superior. This, in turn, came to be known as AW.

Conceptual Understanding of AW

Generally, AW is defined as warfare in which opposing groups or nations have unequal military resources, and the weaker opponent uses unconventional weapons and tactics, such as terrorism, to exploit the vulnerabilities of the enemy.[7] The definition reveals two important connotations of AW. Firstly, the inequality of the opponents and secondly, innovative tactics and techniques of the weaker side to offset the superiority of the stronger.

The first issue of inequality implies in terms of both dimensions and magnitude. Weaker side is not likely to have state based political structure, legitimacy or financial power and will obviously be inferior in military strengths and resources. Next is the aspect of innovative tactics and techniques. According to Clinton J. Ancker, "The implicit premise is that AW deals with unknowns, with surprise in terms of ends, ways, and means.[8] In fact, this is the most important connotation that makes AW distinct from conventional war.

Asymmetric war is protracted in nature and it is not confined to military conflict alone. Rather much of its activities accentuates on political, ideological, religious and psychological domain or factors. Many of these factors may act as principal reasons to breed asymmetric threats in a particular country or area. These factors are explained and diagrammed below in figure-2:[9]

a. A cause, ideological, political or religious may induce a group of people for adopting AW to materialize their ideology. For example, religion based political ideology of forming 'Islamic Caliphate' gave rise to IS, the most infamous terrorist group of the era.

b. Political turmoil, frustration and leadership crisis may cause a segment of population to adopt AW for their self-determination. For example, political turmoil in Iraq after the fall of Saddam Hussein and resulting vacuum in leadership and growing frustration of Iraqi people led to many factions in Iraq who adopted asymmetric means like suicidal attack, car bomb to fight the occupation force.

c. Weak governance, failure of bureaucracy, poor administration, lawlessness, economic crisis, disparities and unemployment can turn a country into a failed state that

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7 AW at https://www.dictionary.com/browse/asymmetric -warfare accessed on 18 June 2019.

8 Colonel Clinton J. Ancker III, U.S. Army, Doctrine for AW, US Army, Military Review, l July -August 2003.

9 Muhammad Zeeshan, AW – Threat and Response Options for Pakistan, Defence Services Command and Staff College, Mirpur, November 2003, P 10.

may lead the sufferer segment of the population to adopt asymmetric means to rise into power. In Afghanistan, for example, long feudal war ransacked the countries governance, administration and economy that in turn gave rise to Talibans, the most dangerous asymmetric entity of last decades.

d. Exploitation by foreign or enemy countries may also cause breeding of asymmetric entity in another country. For example, it is perceived by Israel that armed militant groups like Hezbollah is created and patronized by Iran to destabilize Israel's security.

e. Ethno sectarian unrest in a country may give rise of insurgency or separatist movement in a country who normally adopts asymmetric means against the legitimate government. LTTE in Srilanka is a perfect example of it where the Tamils waged AW against the Sinhalese/Srilankan Army.

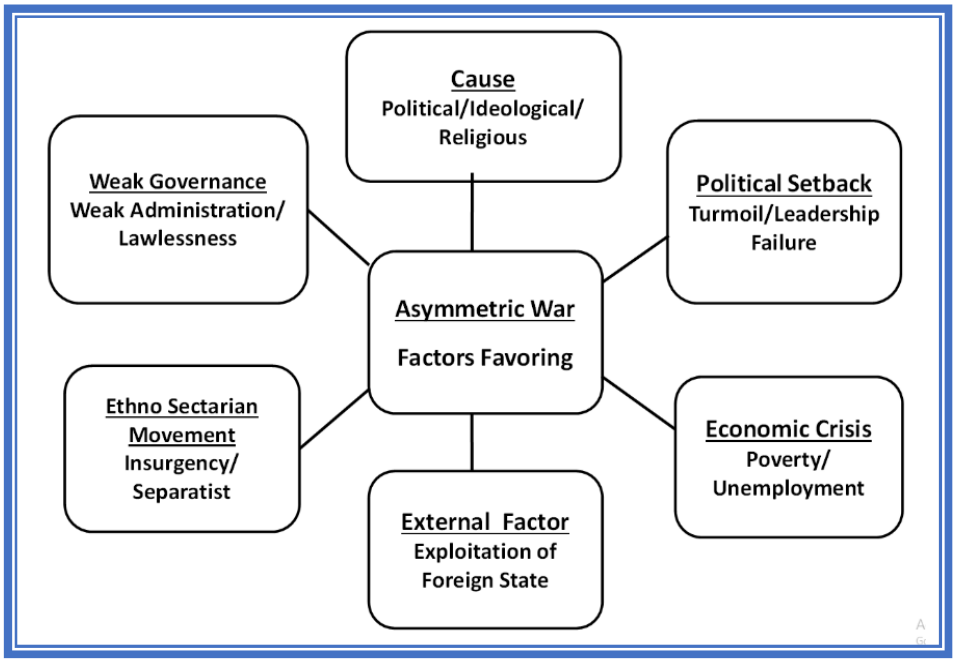

Figure-2: Factors Favouring Asymmetric War

LEVELS OF WARFARE DEFINED IN ASYMMETRIC WARFARE

Analysis of AW in the Context of Levels of War

If we stick to Clausewitzian dictum that- 'War is the continuation of politics by other means"[10], then the question may logically arise as to where is the political domain of weaker

[10] Clausewitz, On War, Edited by Micheal Howard & Peter Paret, Princeton university Press, Princeton, New Jersey, P 156.

opponents? According to the 'Concept of States and its Elements', four elements or characteristics of the state are as follows: Population, Territory, Government, Sovereignty.[11] Insurgents, terrorist groups or non-state actors may not have a state but they envision a state. They normally enjoy support of a population or a segment of population either local or dispersed among various states. They may not have territorial integrity but normally have an aspired territory or country or some part of a country. Their ideological leadership and various organs like political, administrative, economic and military wings work as a shadow government. However, the only element of state they do not possess is the sovereignty which they fight for. Thus, we may say that an asymmetric threat entity phenomenally possesses a subtle state mechanism with a population, shadow government comprised of their leadership, aspired territory and struggling sovereignty. Such political framework, shadow government, popular support, financial, diplomatic, military and other powers of asymmetric entity provide them with all necessary elements and parameter to fight any war through the three conventional levels of war. Strategic Studies Institute of the US Army War College, in their research, therefore, states that "In the realm of military affairs and national security, asymmetry is acting, organizing, and thinking differently than opponents in order to maximize one's own advantages, exploit an opponent's weaknesses, attain the initiative, or gain greater freedom of action. It can be political-strategic, military-strategic, operational, or a combination of these."[12]

Defining the Levels of War in AW

Strategic Level The shadow government or leadership forum works under a subtle state mechanism through their various organs. Although all asymmetric may not be structured with similar wings, they normally include leadership or political wing, administrative wing, propaganda or psychological wing, financial and military wing and so on. The top leadership forum motivates and unites the followers under their ideological vision. They also seek and organize support from foreign states, diasporas, larger non-state actors or from people of same ideological or political view. The psychological and propaganda wing carries out psychological or information warfare. Financial wing organizes finance from diasporas, supporters or sympathizer states or organizations. Military wing outlines the military lines of operations. All these encompass political, psychological, economic or military lines of operation that clearly resemble the strategic level of a war. The various councils/wings of the ISIS are shown in the diagram below who constituted the hierarchy of the organizations and conducted the activities of their strategic levels of war[13]. For example, their military council was responsible for organizing the military lines of operations while the media council was responsible for conducting psychological lines of operation and so on.

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[11] Zaeem Afaq Khokhar, Concept of States and Its Elements available at https://www.scribd.com/doc/56378533/Concept-of-a-State-and-Its-Elements

[12] Steven Metz & Doglous V. Johnson, Asymmetry and US Military Strategy: Definition, Background and Strategy, Strategic Studies Institute, US Army War College 2001.

[13] The anatomy of ISIS at https://edition.cnn.com/2014/09/18/world/meast/isis-syria-iraq-hierarchy/index.html accessed on 25 July 2019

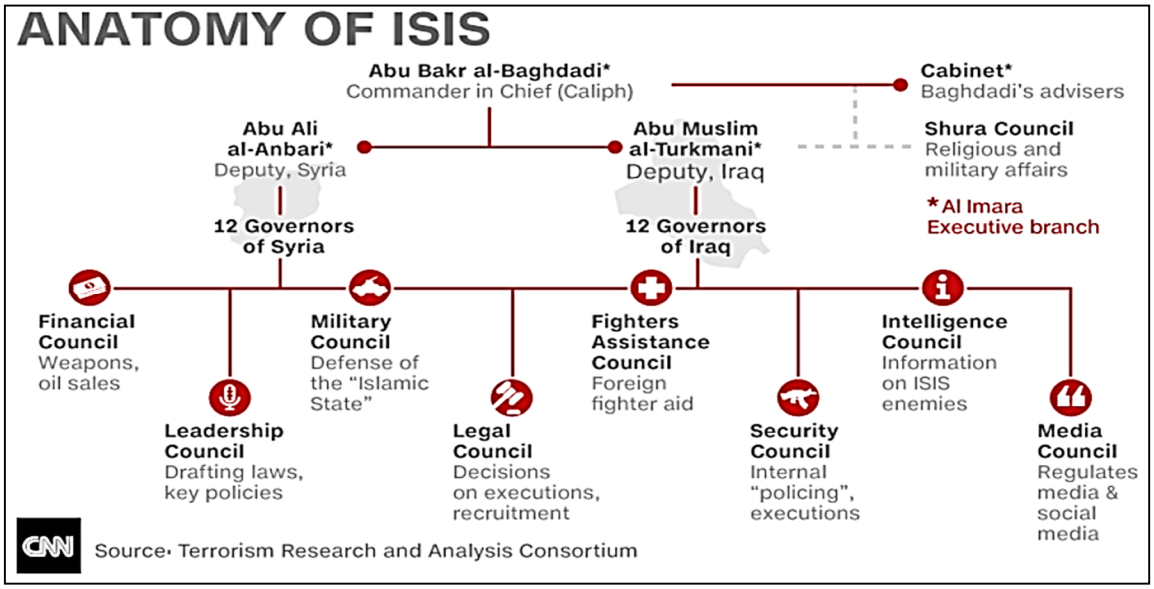

Figure-3: Hierarchy of ISIS's Organizational Structure

Operational Level On the other hand, key personnel of military wing as per the directives of their leadership select the areas or states for safe sanctuaries of their combatants, training bases and theatres to operate. They also make long term plans to conduct series of operations in a continent, state or part of an area in any state. These activities of their military kingpins clearly fall under the purview of operational art. For example, Al Qaeda selected Afghanistan as their base. They also established their military training camps in the tribal administered area along Afghanistan-Pakistan border. From there they operated in their selected theatre of operation mostly in the USA, Europe, Middle East and so on. Joint operation, another feature of operational level, develops over the time if they can acquire three dimensional forces. For example, LTTE, who had own Navy and Air Force, could articulate joint operation in the operational level of AW.

Tactical Level There is no much ambiguity about tactical level of AW. When the militants of the weaker entity confront with the stronger army in a certain area of responsibility, it is clearly tactical domain. Hezbollah, for example, while confronts with Israeli army in armed conflict that is the tactical level of their asymmetric warfare.

Diagrammatic Explanation and Example The levels of war in AW are shown in figure-3 below. Here it is shown that protagonist of AW avoids conventional approach against enemy's strength. Instead they attack enemy's weakness through three levels of war with innovative tactics, weapon and technology[14]. Twin tower attack may be sited as an example of how terrorists conducted this asymmetric warfare through the three levels. Their strategic consideration was to

[14] M R Sudhir, A conceptual Understanding of AW, Centre for Land Warfare Studies Journal, summer 2008. P 59

attack on a target that would shatter the entire the USA and the world. So they selected twin tower as the strategic target not any military objective to avoid the strength. At operational level, they carried out intelligence operation for a long time to collect information, selected dedicated terrorists from various parts of the world and also trained them for an innovative operation against the target. Finally, they conducted the tactical level operation with innovative and unimaginable tactics of using civil aero plane as powerful weapon against the target.

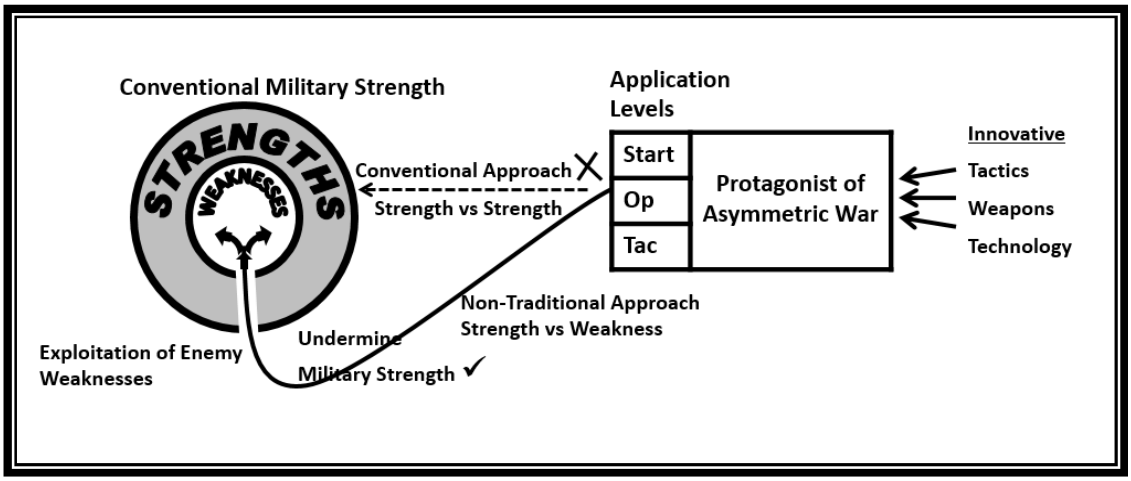

Figure-4: Levels of War in AW

Source: CLAWS Journal, Summer 2008

SUGGESTED WAYS FOR BANGLADESH ARMY TO FIGHT ASYMMETRIC WARFARE THROUGH THREE LEVELS OF WAR

Asymmetric Threat Scenario in Bangladesh

In Bangladesh, asymmetric entities could not establish any foothold due to tough stand and measures taken by Bangladesh Government. However, there were a few tensions sometimes that spilled from regional sources of global terrorism. We know that both Al Qaeda and Taliban's were prevailing in our neighbouring region. Thus their off shoots and activities tried to edge in Bangladesh but due to government's tough prohibitive measures they failed comprehensively.

Mastermind and leadership of most of these regional terrorist groups are linked with Middle East, Pakistan or Afghanistan. They are radicalized, organized, patronized by these connections and entities. The asymmetric threat entities around the region are also financed by religion based NGOs, financial or other religious institutions in subject countries in addition to taxes and donations provided by their supporters, sympathizers and diasporas. So far, due to

strong intelligence, surveillance and tough preventive measures by the concern government agencies, the asymmetric threats are in well control in our country. Yet we need to formulate a comprehensive model or strategy of fighting the AW through three levels of warfare if the need arises in future.

Proposed Model of Fighting AW through Three Levels of War

At Strategic Level The AW is not a pure classical military warfare in entirety rather an all-encompassing campaign involving concern organs of a nation. At strategic level in Bangladesh it may be organized through following stages:

a. **Formation of National Council**. Forming a national council patterned like NCSA taking appropriate representatives from all concerned ministries, agencies and forces.

b. **Identifying the Strategic Level and Centre of Gravity (CG) of Asymmetric Threats**. The strategic levels of AW in Bangladesh comprises the scopes at which the leadership of asymmetric threats organize, interact and operate with their political, ideological, moral and financial linkages both at home and at ME based institutions, NGOs, global non-state actors and their patron foreign countries. And the survivability and operability of these linkages are their strategic CG.

c. **Formulating the Own Strategic Art**. The final step is to define own strategy of capturing or destroying the enemy's CG. This will include formulation of strategic directives, collaboration with global war against terrorism, setting legal parameters to break the linkage of the supporting nations, agencies, institutions and non-state actors with local asymmetric threats.

At Operational Levels At operational level "There are two major areas on which to concentrate: first, the hard-core of terrorist planning where actual operations are conceived and implemented; and Second, the manner in which sympathy is generated for the objectives of particular cells, where recruits are inspired to sign-up and where hiding places are created away from the rule of law".[15] A suggested approach for operational level of AW in Bangladesh, therefore, may encompass following steps:

a. **Forming the Joint Operational Cell or Task Force**. A permanent nature of operational task force comprising high level representatives from Armed Forces, Law Enforcing Agencies and intelligence organizations should be formed to operate at operational level. The task force may consist of senior operational staff at AFD, senior staff of counter terrorism branch of Bangladesh Police and Rapid Action Battalion and appropriate staff from Border Guard Bangladesh and National Security Intelligence. The task force should have earmark force and resources to operate against asymmetric

[15] Asymmetric Threats at http://www.asiantribune.com/index.php?q=node/4582 accessed on 25 July 2019.

entities. It should also have authority to move resources of respective forces on operational requirement.

b. **Defining the Operational Level and CG of Asymmetric Threats**. The theatre of operation of AW in Bangladesh may include ideologically and politically indoctrinated segment of the population and sympathizers like Madrasa based rural and poor population, bases, hide outs, recruit centres and training camps in remote areas, jungles or in dense urban habitation and related activities there. Operational CG may include the safe sanctuary of asymmetric threats, their indoctrination process and recruiting, training and long-term planning capability of the operation in a particular theatre of operations, areas, institutions or a segment of population.

c. **Formulating the Operational Art**. Operational art of fighting AW in Bangladesh may encompass isolating the asymmetric entities from their target population, destroying their bases, recruiting and training centres, blocking their financing and breaking their operational linkage amongst various organs like political, diplomatic, financial and military wings in the theatre. This will diminish their capability to sustain protracted operations.

At Tactical Level Following steps need adequate attention to prepare and operate more efficiently at tactical level:

a. A comprehensive doctrine for AW must be formulated for in-depth understanding of the issue and the role and tasks of various agencies involved at tactical level. The doctrine should also specify the parameter and scope of cooperation, coordination, interaction and training together.

b. Both police and army should re-organize their tactical training with due emphasis on AW besides their conventional training.

c. Having conceptualized and trained on AW, constant vigilance, monitoring and coordination should be enforced to locate and identify the likely existence and acts of asymmetric threats in breeding stage.

d. Efficiently fighting any asymmetric threat or attack whenever and wherever it is launched.

Conclusion

The conventional military theory of 'levels of war' describes how a war should be prosecuted through strategic, operational and tactical levels. War today has entered into its fourth generation from its typical conventional pattern. Armies around the world today are fighting terrorism, insurgency or non-state actors that gave rise to a complex form of warfare named as Asymmetric War. Bangladesh Army and the law enforcing agencies are also involved in fighting the AW under the active patronization of the Government. However, we need to define a holistic approach for Bangladesh Army to fight the AW through the three levels of war.

In Bangladesh, asymmetric threat could not establish foothold due to tough measures and stand taken by Bangladesh Government and Law Enforcing Agencies. However, there were a few tensions mainly spilled from regional sources of global terrorism in neighbouring region. Fighting AW in Bangladesh perspective urges a holistic approach encompassing all concerned organs through three levels of AW. At strategic level, under a national level Security Council, asymmetric threat environment should be analyzed to identify their strategic level of threats and its CG. Own strategy, then, have to be formulated to destroy the enemy's CG. At operational level, a joint task force should be formed and the operational CG of asymmetric threat is to be identified followed by an operational art of fighting asymmetric threats. At tactical level a comprehensive doctrine for AW must be formulated. Both police and army should re-organize their tactical training with due emphasis on AW. Finally, constant vigilance, monitoring, coordination and effective armed action are to be launched whenever and wherever asymmetric elements or actions are observed.

RECOMMENDATIONS

Basing on the above analysis of the paper, followings are recommended:

a. At strategic level a council to deal with asymmetric threats may be formed taking top level representatives from Ministry of Defence, Home, Foreign Affairs, Law and any other ministry if necessary.

b. At operational level a Task Force comprising members of Bangladesh Armed Forces, Bangladesh Police, Border Guard Bangladesh, Rapid Action Battalion, National Security Intelligence and other agencies may be formed to fight at operational level of asymmetric war.

c. Comprehensive doctrinal literature for AW may be formulated for armed forces and law enforcing agencies.

d. Training of Bangladesh Army and Police may be reviewed giving due emphasis on AW.

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