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Singapore celebrated 50 years of nationhood in 2015. It was a success story of how a poor and small island state (718.3 km²) which had no natural resources became a developed nation with a reputation for strong economic growth, racial harmony, and creating a garden city. Singapore's gross domestic product per capita in 2014 stood at USD56,319 which was five times the world's average and ranked ninth among 186 countries (International Monetary Fund, 2015). In 2014, it had a population of 5.47 million, of which, 3.87 million were citizens and permanent residents (Department of Statistics, Singapore, 2015).

The authors would like to express their gratitude to Defence Psychology Department, Ministry of Defence, Singapore, for their assistance in this chapter. The views expressed in this paper are those of the authors and not of Leadalytics, Ministry of Defence, Singapore, or the Singapore Armed Forces.

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Foundation of the Singapore Military

On 9 August 1965, Singapore separated from Malaysia and became an independent nation. The founding Prime Minister, Mr. Lee Kuan Yew, believed that a strong Singapore Armed Forces (SAF) was needed to provide the security and stability for political, economic, and social progress for this new nation (Chiang, 1997; Huxley, 2000). In March 1967, a National Service (Amendment) Bill was passed in parliament, requiring every male Singapore citizen to serve national service in the military, police, or civil defence forces. Today, Singaporean males are enlisted for National Service Full-Time (NSF) between the ages of 18 and 20 to serve for 2 years – after which about a third of them will go on to pursue their tertiary education.

Thereafter, the NSFs in the military become operationally-ready national servicemen (NSmen), more commonly known as reservists in other countries, who form the main fighting force of the SAF. Most NSmen enter into a 10-year training cycle and are usually called up for military training or duty each year, up to a maximum of 40 days per year (Ministry of Defence, 2015a). National service is therefore part and parcel of life for all male citizens in Singapore. Female citizens are not required to serve national service but a small percentage chooses to undergo training and serve as

Fig. 31.1 18- to 20-year-old male citizens serve National Service Full-Time for 2 years (Source: Cyberpioneer)



regular military personnel, taking up both combat and non-combat roles. Figure 31.1 shows a group of Singaporean NSFs in typical drill and ceremony training formation.

The NSFs and military regulars together form a standing force of about 70,000, with the ability to mobilize over 300,000 NSmen. These numbers exclude a significant number of non-uniform personnel who works in non-combat and support roles. The SAF comprises the Joint, Army, Air Force, and Navy services. The Army is organized into combined-arms divisions and has an array of weapon platforms such as the Leopard 2 tanks, infantry fighting vehicles, howitzers, and high mobility artillery rocket systems. The air force is organized into commands and operates aircrafts such as the F15s, F16s, and Super Pumas. The Navy is organized into formations and has frigates, corvettes, and patrol vessels. The four services work together as a networked and integrated defence force.

In the last decade, the SAF has increased its involvement in Humanitarian Assistance and Disaster Relief (HADR) and Peace Support Operations (PSO), as well as to support multinational forces in countering global threats (Ministry of Defence, 2000, 2015b). For example, over 1500 military personnel from the army, air force, and navy were deployed for HADR operation to help thousands of Indonesians affected by the Tsunami that killed hundreds of thousands in December 2004 (Boey, 2005). More recently, the

SAF provided HADR to the injured in Nepal following the April 2015 earthquake. In support of UN peacekeeping mission to restore peace and security in Timor-Leste, the SAF contributed over 1000 military personnel and equipment from 1999 to 2012. Since 2007, more than 350 military personnel have participated in the NATO-led International Security Assistance Force PSO and reconstruction efforts in Afghanistan. Also, since 2009, more than 700 military personnel have served in the multinational counter-piracy task force in the Gulf of Aden. At home, the SAF provides homeland security in the form of protection of key installations, interception of aircrafts with unauthorized flight paths, and participation in anti-piracy efforts in the international sea lanes around Singapore.

Military Psychology in the Formative Years (1967–2002)

The main pillar of military psychology (Gal & Mangelsdorff, 1991) in the SAF is industrial-organizational psychology. The Ministry of Defence (MINDEF) has long recognized the potential contribution of industrial-organizational psychology to the operational effectiveness of the SAF. As early as 1967, a Psychological Testing Centre was established to screen, select, and allocate NSFs and military personnel for different vocations. Over the years, the requirements for industrial-

organizational psychology grew – leadership development, team development, organizational development, surveys, and research were added. The centre was reorganized to become the Personnel Research Department, then later to become the Applied Behavioural Sciences Department, and subsequently to Defence Psychology Department (DPD). DPD is organized to serve the needs of both MINDEF and the SAF. It is headed by the chief psychologist who reports to the Director of Manpower, MINDEF.

The other two pillars of military psychology in the SAF are counselling and clinical psychology. Counsellors operate out of the SAF Counselling Centre (SCC) which is an independent organization from DPD. But like DPD, the head of SCC reports to the Director of Manpower, MINDEF. Clinical psychologists form the smallest group among the three. They work closely with the psychiatrists and operate within the medical community as part of the SAF medical corps. Together, the counsellors and clinical psychologists run mental health programmes (for the purpose of education and prevention), and provide the care and support for soldiers' adjustment to military life, and for any soldiers who may have encountered traumatic experiences in training and operations.

Psychology in Singapore has a relatively short history. The first full-time tertiary course in psychology was offered at the National University of Singapore only in 1985. As such, up to 1989, MINDEF recruited civilians who were educated in psychology from overseas to serve as non-uniformed military psychologists. Today, three local universities offer full-time degrees in psychology, and some graduates join MINDEF as entry-level psychologists. Unfortunately, there is still a lack of full-time postgraduate courses specializing in industrial-organizational psychology, counselling and clinical psychology in Singapore. Therefore, those interested would need to either go overseas to pursue a full-time course or take up a local part-time course offered by an overseas institution.

In the early 1980s, MINDEF decided that it was important to have uniformed psychologists to augment the pool of non-uniformed psycholo-

gists in the Personnel Research Department (what is now DPD). The main reasons for the decision were as follows: uniformed psychologists, who have undergone military training can better relate to the soldiers, sailors, and airmen, follow them on training and understand the issues they face, and also, they can be readily deployed to support troops in the theatre of operations. As a result, the first batch of seven junior military officers was sent to U.K. and Australia in 1985 to study psychology under a sponsorship programme. Subsequent batches comprising two to three junior military officers were sent over the next few years to build up a critical mass of uniformed psychologists. Upon their return, the pioneering uniformed psychologists continued their training, learning from military psychologists from other armed forces, and began to develop and provide various behavioural science-based services (e.g., leadership, team and organizational development programmes) and consultation for combat units across the army, air force, and navy. They adopted the scientist-practitioner model (Dunnette, 1990; Murphy & Saal, 1990) in the course of their work. Research was performed to examine constructs (e.g., NSF's military socialization, commitment, and motivation to lead) that were relevant to SAF's operational readiness, as well as to customize and evaluate the effectiveness of the psychological services provided.

Professionalism of the military psychologists was further enhanced when uniformed and non-uniformed psychologists were sponsored for post-graduate studies, e.g., Masters in organizational psychology, organizational behaviour, and management, and Ph.D. in industrial-organizational psychology. Upon their return, they contributed to the growth of military psychology in the SAF – practices and research increased in both quantity and quality. Since 2000, many of them have also contributed papers at international conferences (e.g., International Military Testing Association annual conference) and some have been published in top-tier journals (e.g., *Journal of Applied Psychology*).

By the early 2000s, many soldiers had experienced over a decade of behavioural-science services provided by uniformed and non-uniformed psychologists who operated from the Applied

Behavioural Sciences Department (what is now DPD). Commanders from the Joint, Army, Air force, and Navy recognized the contributions of psychology and military psychologists in enhancing human and unit performance. They sought for some of the psychologists to be decentralized and integrated within their command. The request was so strong that in 2002, three psychologists were transferred to the Joint service to help set-up the Centre for Leadership Development and to develop the leadership doctrine and programmes for the SAF.

Contemporary Military Psychology: Operating Principles and Practices

A Conscript Armed Force and Psychology's Multiplier Effect

When reflecting on the organization of psychologists and arriving at their operating principles, due consideration was given to the operating context and desired outcomes of employing psychologists in the armed forces. In the present case, the largely conscript (national service) nature of the SAF and the multiplier role that psychologists could perform were important considerations underlying their organization and deployment. An additional consideration pertained to the need to maintain the competencies and professional standards of psychologists employed by the organization.

As described earlier, all Singaporean males have to serve as NSF's for 2 years typically sometime between the ages of 18 and 20. Consequently, issues relating to civilian adjustment to the military lifestyle as well as motivation and commitment to defence would be important to research and gain understanding over successive generations of these NSF's (Wong 2006; Ministry of Defence, 2013). Such research informs on national service as well as human resource (HR) policies that will impact on NSF's and regular soldiers alike (Leong, 1978, 2013). In addition, the national service system creates opportunities for follow-up interventions to be developed, which may arise from the research described earlier or by way of

optimising the talents of the NSF's in relation to the nation's defence needs.

Hence, research using aggregated cohort data from an estimated 20,000 NSF's allows comparisons for inter-generational differences to be made, while longitudinal studies of soldier motivation and commitment informs commanders and policymakers about changes in motivation and commitment over the passage of time. At the same time, psychometric testing and other psychological testing procedures facilitate a better match between NSF's and the myriad of vocations in the military, while scientifically based selection procedures are employed to identify soldiers for leadership roles. Figure 31.2 portrays Singaporean soldiers engaged in a scenario to assess their leadership capabilities. All these require a pool of psychologists who are centrally organized to develop, conduct, and apply psychological research and skills in partnership with policy and HR stakeholders. This cross-functional partnership has proven to be effective for contextualized understanding of organization-wide psychological research and applications.

On the other hand, issues of adjustment to the military lifestyle and any downstream impact on unit morale and readiness require psychologists to be co-located with commanders and soldiers so that responsive and contextualized support can be provided. These include counselling soldiers to help them adjust to basic military training, assigning soldiers to specific roles in the unit, enhancing leadership and team effectiveness, working with commanders to improve unit and soldier performance, as well as addressing psychological issues from critical incidents. Such issues cannot be managed centrally but are more effectively addressed through employing psychologists who are decentralized to work with commanders and soldiers on the ground.

Supporting Operations and Managing Critical Incidents

Psychologists in the SAF have also had a history of involvement in critical incident stress management and providing psychological sup-

Fig. 31.2 Singaporean soldiers taking a situational test developed by military psychologists (Source: Army News)



port to servicemen and women partaking in various military operations. The former involves assisting commanders to monitor and manage the stress and coping of servicemen who experienced traumatic stress arising from mishaps in training. The latter is concerned with psychological assessments and interventions as part of the process of preparing and maintaining the psychological readiness of servicemen who embark on peacekeeping, humanitarian and disaster relief, and other operations. Psychologists would also be involved in debriefing soldiers towards the end of their mission, to prepare them mentally to rejoin their families after having spent a considerable amount of time away on operational duty. Psychologists partook in supporting the SAF's first UN combat peacekeeping mission deployed to Timor-Leste in 1999, involving screening and selection, preparation, monitoring, and conducting psychological decompression to facilitate returning troops' adjustment upon homecoming. Since then, psychology support has become a common feature for SAF overseas missions on land, air, and sea. Efforts in supporting critical incident stress and operations require the psychologists to have sufficient time on the ground so that trust and rapport are built to enable the psychologists to be effective in working with commanders and soldiers alike.

Maintaining Professional Standards

Finally, specialists and professional resources are obliged to maintain standards of professional practice and align themselves with national and international levels. Minimum qualifications in psychological education have been instituted for the recruitment of entry-level psychologists in the SAF, with more senior positions requiring a combination of postgraduate education and relevant work experience. Consequently, a key role of DPD focuses on establishing standards of practice for psychologists in the SAF, creating a framework for maintaining professional currency and developing systems to enable their professional growth over time.

Together, these considerations (centralization for systems-level research and systems implementation, responsive and customized ground support to meet peacetime and operational needs, standards for employment, training, and development) provide important bases for the employment and organization of psychologists in the SAF. The need for psychologists to effectively address organizational and systems-level issues as well as be responsive to support commanders and servicemen's psychological needs at the unit and personal levels rules out purely centralized or decentralized modes of organization and operating. A hybrid model that makes use of finite pro-

professional resources to meet both levels of needs has thus evolved, one that also allows centralized management of the professional aspects of the psychologists' career and development to be achieved. At the same time, the hybrid model allows for professional oversight and development of psychologists on the ground, thus maintaining standards in the ethics and practice of psychology and contributing to a stronger professional identity in the SAF.

As part of the broader framework of the behavioural sciences, the practice of psychology in the SAF is concerned with an evidence-based approach to improving our armed forces. Hence, psychologists are oriented to be scientist-practitioners from the onset. The initial training of new psychologists focuses on the organizational and environmental contexts for the practice of psychology in the SAF. They are also oriented to the main applications of psychology during this phase of their development. Subsequently, psychologists are supervised on a variety of assignments. Regular professional exchanges with the psychological services of other government agencies as well as attendance and presentations at professional seminars and conferences help to benchmark the work of the psychologists.

Given their training in research and statistical analyses, psychologists in DPD are actively involved in applied research projects involving armed forces personnel. Such research provides the bases for relevant systems level applications, such as vocational assessment and assignment, as well as assessment and selection for junior command. At the same time, empirical research on employee satisfaction and perceptions of conscript service provide relevant feedback for the design of HR policies.

Over the years, regular interactions with academia, consultants as well as military psychologists from other armed forces has allowed the SAF psychologists to tap into best practices and new developments in psychological research and practice. Hence, more sophisticated statistical methods such as data mining and data analytics have been incorporated to facilitate effective analyses of large data sets in applied psychological research. This facilitates the adoption of

evidence-based approaches to developing organizational policies and interventions.

Developments in psychological theories such as Item Response Theory have also facilitated improvements in computer adaptive testing for the assessment and selection of recruits. Incorporating these developments has improved productivity in the psychological assessment of large numbers of NSFs awaiting assignment to vocations in the military. Yet, traditional methods of one-on-one psychological interviews remain a relevant skill for our military psychologists.

Working with unit commanders, in addition to applied research conducted on a smaller scale, psychologists are more involved in one-to-one interventions. These include work counselling, training, and educating commanders and soldiers on psychological aspects of military performance, as well as developing and evaluating localized interventions to improve soldier and unit performance. As with applied research conducted at the organizational and systems level, the focus on empirical outcomes is well received and provides commanders with relevant feedback on unit effectiveness.

Because of the unique context of psychological practice in the Singapore military, there is a need for academic knowledge to be adapted for application. Consequently, military psychologists in the SAF are part of an ecosystem of knowledge development and dissemination through documentation and regular sharing of their experiences in the organization.

Conclusions

This chapter provided an overview of some of the key developments and considerations that influenced the organization and employment of military psychology in the SAF. The unique requirements of securing an island nation's foundation for stability and success coupled with national service for all male Singapore citizens were important drivers in the development of a behavioural sciences' capability aimed at optimizing Singapore's limited manpower resources to meet its defence needs. Employing psychologists in the military has served

the twin requirements of applying behavioural sciences knowledge and research skills to address any issues encountered during military life and to enhance soldiers' performance and unit effectiveness. This has facilitated the contextualization of a variety of theories from the social, organizational, leadership, and even clinical-counselling realms to develop relevant policies and practices for successive generations of personnel who have been called to serve in the SAF.

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