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Although it is a young discipline, military psychology in China is rooted in a distinguished history. The present chapter will briefly review this history, and provide a current description of how military psychologists are trained and employed in modern day China.

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## History of Military Psychology in China

The long history of military psychology applications in China is nicely discussed in the book *Psychological Warfare in Ancient China* (Miao, 2007), and also in the work by (Yan & Zhou, 2013) describing the psychological selection of paratroopers during the Second Sino-Japanese War from 1937 to 1945. The first to the fourth military medical universities were named in 1954 when medical colleges were merged and reorganized by the central government and the Military Commission of the Communist Party. More recent developments of military psychology in China can be divided into three major stages. The

first stage was the *recovering stage*, from 1978 to 1999. With the implementation of the Chinese Economic Reform and Open-up Policy (1978), Chinese military psychology jobs again blossomed on this ancient oriental land. In 1999, the former First Military Medical University was transformed from military university to civilian university, with the name changed to South Medical University. Therefore, now there are three medical universities, namely, from the Second to the Fourth. The first set of criteria for military psychological selection was established in 1998, with the establishment of psychological standards in the selection of flight cadets and astronauts. Based in part on the success of this program, the Military Psychology Specialized Committee, subordinate to the Chinese Psychological Society (academic not clinical practice), was organized in 2003.

Next, the *rapid developing* stage occurred from 2000 to 2010. This stage was highlighted by the establishment of Chinese Military Psychology Specialized Committee in 2003, reflecting the popularization and application of test standards for conscription and psychological assessment of cadets, as well as the reorganization of military psychological response units. In 2006, the first National Centre of Psychological Examination of Recruitment was set up in the Fourth Military Medical University to supervise recruitment for China's military. For the first time in 2008, a military psychological response unit was organized

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and dispatched to provide psychological relief work to civilians and servicemen working in the affected earthquake area of Wenchuan.

The third stage was another period of fast and profound growth, starting from the 12th Five-Year Plan of China. China's Five-Year Plans are a series of social and economic strategies and priorities that guide development. During this time period, the research direction and applications focus of Chinese military psychology transitioned from psychosomatic health to overall psychological health, and from a focus on psychological stress disorders to military mental service for information-support operations and high-tech war. In 2010, the entry of *Research on Chinese Servicemen Psychological Test System and Standards* won the State Science and Technology Award, the highest national award for scientific research in China.

In 2012, the medical universities in China began to enroll undergraduates for a Medical Psychology major. These undergraduates study both medicine and psychology for 5 years in universities, with some of the top students continuing to pursue further education. Almost all the comprehensive universities in mainland China offer a psychology major for students. Many of these students end up serving as military psychologists.

Today, most military psychologists in China are uniformed servicemen, with very few civilian psychologists working for the Army, Air Force, or Navy. Most psychologists serving in operational units work as the only mental health provider in the unit. Psychologists working in institutes or universities usually have technicians to assist them with testing, psycho-educational training and some limited counseling. These technicians include postgraduates and PhD candidates, as well as some visiting junior scholars. They also serve in the military institutions such as hospitals, research centers, like psychological health centers, and also conduct clinical work in hospitals. There are Psychological Departments in military medical universities, along with psychological labs, and most military hospitals have psychological consultation department or psychiatry department.

This remainder of this chapter covers the achievements of Chinese military psychology in recent years, in the following eight areas: (1) psychological selection of military personnel; (2) influence of military environment on mental health; (3) military human factors psychology; (4) psychological warfare and psychological defense; (5) individual mental health; (6) military psychological training; (7) group mental health and military organizational culture; and (8) non-wartime mental health services.

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## Psychological Selection of Military Personnel

The practice of psychological selection of military personnel in modern China started at the end of the 1950s. The Air Force Research Institute, in cooperation with the Institute of Psychology of the Chinese Academy of Sciences, conducted the first psychological selection research with military flying cadets. This work was suspended during the time of the Cultural Revolution and was restored in 1978. Then in 1987, this research entered into the second stage. During that time, the Air Force Research Institute conducted research in the areas of intelligence, will power, temperament, and character of the best pilots. From 1994 to 1997, experts from the Institute of Psychology of the Chinese Academy of Sciences (CAS), Peking University, the Fourth Military Medical University, and Air Force professional institutes developed the Pilots Psychological Selection Evaluation System, and constructed the three platforms of Computerized Selection, Flight Simulator Evaluation, and Somatic Movement Ability Test, which include operational stability and movement coordination related to reaction and performance during flight. In the late 1990s, the first set of military criteria for psychological selection of flight cadets was released, and this process has made marked improvements over the years (Fu, 1991). Also in the mid-1990s, the first set of psychological selection methods and criteria for astronauts in China was developed under the combined efforts of CAS, Zhejiang University, the Fourth Military

Medical University, and the China Astronauts Research and Training Center.

Since this time, the astronauts' psychological selection process has been a successful program. Inspired by the selection methods for astronauts, research on psychological selection of vehicle drivers (Miao & Wang, 2004), pentathlon athletes (Li et al., 2005), aquanauts, and navigation cadets for the military has also been conducted. With financial support from the Ministry of National Defense and the formal three military headquarters in the early twenty-first century, the Chinese military psychological selection research has made considerable progress. Under the leadership of the Fourth Military Medical University and other institutes, the Competency Model of Chinese Military Personnel was developed (Miao & Liu, 2015). In 2006, the National Recruitment Psychological Test System and the Cadet Psychological Selection System for Military Academies was validated by researchers and the standardized application was implemented domestically within the entire Chinese Army. Since 2003, the systems have been used to test over ten million candidates, and disqualified more than 300,000 applicants, barring those possibly affected by mental disorders, energy disorders, and personality disorders from serving in the Army (Miao, Luo, Liu, Li, & Su, 2006). In the area of occupation classification, research on psychological selection of special assignments, such as females, submarine crew, radar operators, signal corps, and electronic countermeasures (ECM) has made continued progress.

Within a short 38-year period, psychological selection methods and related research evolved from paper-pencil testing, to Computer Assisted Testing (CAT), to Computerized Adaptive Testing (CAT), to testing based on wireless local area network (LAN), and to the newly developed fusion detection technology. The efficiency, convenience, and stability of psychological testing are constantly improved upon to meet users' needs. Technology on computerized psychology testing was being researched by military institutions in early 2006 and the results were published in 2009. Based on these contributions, CAT personality tests were applied officially in later ver-

sions of the conscription personality software (Yang et al., 2009). The research on high-risk army populations for mental disorders with enhanced psychological testing decreased the percentage of severe mental disorders within the army significantly. Research results concerning antisocial personality disorder (ASPD) violent crimes were markedly reduced in the Army. The newly developed fusion detection technology represents integrated technologies based on personality tests, eye-movement techniques, EEG, soft neurological signs detection, and MRI (Xiao, Miao, & Gong, 2007). This is a breakthrough technology from traditional psychological testing, with advantages of having greater objectivity, and less subjective human error.

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### **Influence of Military Environment on Mental Health**

China has a vast and geographically variable territory with complex terrains, boundaries, and coastlines. This terrain mixed with modern weaponry in microenvironments can create conditions like claustrophobia, noise, radiation, acceleration, vibration, and continuous operation, and can severely influence operation performance. Since the 1990s, various environmental influences such as plateaus, border defenses (Wang, Zuo, & Ren, 2006), submarines (Ma, Xiao, Zhang, Xie, & Yin, 2006), islands (Ma, Xiao, Zhang, & Zhang, 2004), and terrains such as the Gobi desert (Liu et al., 2002) have impacted the emotional stability of soldiers, sailors, and airmen. The man and environment interface has become a major direction for military psychological research and practice. Other types of activities, such as continuous operations, military maneuvers, and military athletic contests, also see a large number of lab or field studies being carried out. The military psychologists have contributed significantly in basic theories, human performance, psychological and physiological mechanisms, fatigue and sleep deficiency, preventive and protective measures, and crisis interventions (Miao & Wang, 2004). These areas of research have created a solid foundation for the composition of military psychological

health education series and psychological stress protection manual, as well as the formulation of standards about psychological health support service. The series includes *Solider Manual*, *Military Officer Manual*, and *Military Medical Officer Manual* (Miao & Wang, 2004).

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## Military Human Factors Psychology

In 1981, under the instruction of the renowned Chinese scientist Xuesen Qian, Xin Chen, and other scientists presented the theory of Man-Machine-Environment System Engineering (MMESE). MMESE played a highly important role in the development of Chinese aviation, aerospace technology, navigation systems, and military weapons. Aviation research has focused on the interactions between man and machine in the cockpit. This research has focused on cockpit design detail and crew coordination such as illumination, orientation, instruments arrangement and readout, instruments display design, and control system design impacting work efficiency. As a result of this, several military standards like The Chinese Characters and Wording of Aircraft Electrical/Optical Display have been developed. These two standards have been successfully completed in accordance with the specific requirements of manned space flight (Yue et al., 2013). Military psychologists have made further contributions on the features of man-machine ergonomics, space simulators (like human centrifuges), low-tension sealed cabins, neutral buoyancy water tanks, spacesuit test cells, extra-vehicular activity (EVA), procedure training hypobaric chambers, docking training simulators, and spaceship-target vehicle multifunction simulators. In recent years, a series of high-tech developments, such as pattern recognition, artificial intelligence (AI), virtual reality (VR), and nanotechnology (NT), has been employed in research and development of the systematic integration of the new type air fighter.

In addition, a series of studies about the influence of sleep deprivation on cognition and emotions was conducted employing cognitive approaches, event-related potentials (ERP) and

fMRI technique. Objective Evaluation Criteria of Mental Fatigue was set for the real-time monitoring and protection of mental fatigue of military personnel on special military posts. These may shed light on future decisions for working and resting routines for military operations.

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## Psychological Warfare and Psychological Defense

Modern psychological warfare is an important research field that gained a greater focus in the 1980s in China. At present, there are three main breakthroughs in psychological warfare theory (Jiang, 2006). First, the connotation and denotation of psychological warfare has been established. Psychological warfare refers to warfare that maliciously affects human minds and emotions through information media by triggering illusions and disorientation, causing collapse of morale and awareness, and finally, changing a person's attitude and behavior. A clear understanding of the effects and operational mechanisms of psychological warfare has also been achieved; in particular, the process of using multiple means of information communication to stimulate the subjects until the expected psychological effects occurs.

Second, the conceptualization of Information Trauma from the perspective of psychological defense has aroused the attention of researchers. To use information trauma is to strike the human recognition system with deleterious information to alter or distort attitudes and combat willpower, and to induce mental disorders or dyspareunia, thus interfering with commanding and decision-making. In this sense, psychological warfare is the course of attacking the enemy's mental soft spot via information so the enemy suffers from information trauma. Therefore, the effects of psychological warfare depend highly on the skillful utilization of information, and the thorough analysis of the enemy's weak points. As for the evaluation of effects, a level and range of influence are observed. Third, Chinese military experts have learned a lot from foreign forces by studying

their research results and analyzing their conditions, characteristics, and modes of psychological warfare under informationization (Miao, Xiao, Zhu, & Liu, 2013). Furthermore, Chinese military experts have also conducted experiments, and the research results could be used in military training operations.

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### Individual Mental Health in the Army

Since 2000, four reports of epidemiological investigation on the status of mental health in the military were conducted. Although an increased trend toward poor mental health is observed, the overall rate of psychological disorder within military environment is still significantly lower than that of the general population. Occurrence of psychological disorders is higher when special environments and task conditions are involved. The most prominent psychological problems in the army are schizophrenia, depression, anxiety disorder, and personality disorder, which account for roughly 3/4 of the military dropouts. The occurrence of psychological disorders has a direct relationship with family background, individual resilience and role in military, and living and training circumstances. Mental health proves to be a crucial index when evaluating the overall health of servicemen and military organizations (Yang, Xiao, Gong, & Luo, 1995).

The cultivation and recruitment of psychological professionals is important for the maintenance of mental health for servicemen. In the late 1990s, military psychological staff was trained to recruit other psychological professionals. The trainees had varying academic backgrounds, coming from fields such as psychology medicine, political science, management science, information technology, literature, history, and nursing. Facing these circumstances, six areas of medical psychological work and military medical officer functions were proposed: education, assessment, screening, counseling, training guidance, and service security. It is suggested in the *Workbook for Military Medical Officer — Practice and*

*Techniques* that all trainees should learn and master the six aforementioned orientations (Miao & Liu, 2015).

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### Military Psychological Training

Servicemen on special assignments reflect more successful examples of military psychological training that they have received to perform more effectively on their jobs. For instance, the research results on emotional stability, physiological, and mental features of astronauts during training have provided foundations for determining psychological selection methods and training of Chinese astronauts. For flying cadets, psychological training played an important role in improving flying performance and decreasing elimination rate.

For military pentathlon athletes, comprehensive psychological skill training helped the Chinese delegation win the team championship 14 times in the international military pentathlon, the sports competition exclusively held for service members (Wang, 2014). The military pentathlon is organized by the International Military Sports Council (CISM) and consists of five parts: shooting with the standard rifle, obstacle-run, obstacle-swim, throwing standard projectiles, and cross-country running.

Military submariners receive systemic psychological training before conducting diving experiments at great depth to guarantee the individual's psychological health. Other categories of troops that receive psychological training include radar troops, submarine officers and sailors, and signal corps.

In 2008, the Fourth Military Medical University proposed the 512 Psychological Intervention Model (512 PIM), a new psychological intervention. 512 PIM was developed for the Wenchuan Earthquake field according to practical principles and the knowledge of the Chinese military. "5" means the model includes five stages, "1" means that one interviewer performs the intervention, and "2" means the duration of intervention is approximately 2 hours. Studies have shown that 512 PIM is effective as a

psychological intervention for military rescuers in reducing symptoms of PTSD, anxiety, and depression after a crisis (Wu, Zhu, Liang, Liu, Yang, Yang, & Miao, 2012). This method was widely used in a number of non-war military operations, like medical service maneuvers, military drills, emergency tasks, and military parade support; it has been well-received among military units.

The effectiveness of cognitive and behavioral psychological training has attracted the attention of the Chinese military training officers. In their training they adopted some approaches, like mindfulness training, which is beneficial for cultivating self-confidence and teamwork spirit (see also Bowles et al., Chap. 13, this volume). In recent years, the military psychological training has begun to refer to a specific domain of individual training made up of emotion training, biological feedback training, visual reality (VR) training, and mindfulness training. Research findings regarding psychological training found an increase in emotional stability, attentiveness, self-efficacy, and positive psychological capital (i.e. characterized by high self-efficacy, optimism, hope, and resiliency) (Ma et al., 2012). There was also an increase in combat ability of individuals, including awareness of military discipline, shooting ability, and fist-fighting ability, from this training (Ma et al., 2012). Outward-bound development, together with supporting psychological training programs and equipment, has played a significant role in boosting military operational performance and contest results (Wang, Liao, Zhu, & Zhang, 2012).

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### **Group Mental Health and Military Organizational Culture**

The collective mental health of combat units has garnered increasing attention because it is one of the most important factors that contribute to combat effectiveness. Researchers in the Fourth Military Medical University have studied the theory, assessment criteria, and have tested tools for combat unit's group mental health. They also established the initial mental health evaluation

and early prevention measures in combat units. Research findings demonstrated that the six dimensions constitute the group mental health of combat units, namely, are leader behavior, cohesion, interpersonal relations, morale, organizational support, and organizational effect (Wang et al., 2012). Group mental health refers to the condition of effective commanding by leaders, high spirit and morale of unit members, and the sufficient support provided by the organization. Studies have shown that sound group mental health could enhance operational effectiveness, and resist negative factors under stressful circumstances such as adverse natural environment or social environment factors, interpersonal factors, and stress from management (Miao & Liu, 2015).

On one hand, these findings provide scientific and practical tools for evaluating and dynamically monitoring the status of mental health of combat units. On the other hand, the findings reflect existing problems of unit mental health, thus providing evidence for the need for further research based practices for combat forces.

As for military culture, hotspots for research include job satisfaction of junior officers (Yang, Zhu, Sun, Li, & Miao, 2007), military organizational commitment (Hao, Miao, Sun, Yang, & Liu, 2007), unit morale (Li, 2006), military team spirit and cohesiveness (Zhang & Wang, 2006), studies on the personality structure of Chinese people (Cui & Wang, 2004), situational awareness (Liu, Shao, Wang, Liu, & Qi, 2006), social cognitive bias (Zhang, Yang, Huang, & He, 2004), and stress-crisis intervention in military environment.

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### **Non-wartime Mental Health Services**

One important research focus is on the techniques and procedures of psychological crisis intervention for servicemen under non-war operations and conditions. For instance, during the relief work of Wenchuan earthquake in 2008, hundreds of People's Liberation Army psychologists were assigned to frontline troops to help and protect the officers and soldiers from suffering psycho-

logically. Ever since the Wenchuan earthquake, mental health service groups include military psychologists within the main body, along with civilian psychologists, clinical doctors, and social workers becoming an essential power in various significant non-war operations. Relevant technical guidelines have been updated for non-war operations.

The psychological medical support organizational systems have been improved for diverse military operations. These guidelines include psychological service plans, standard operating procedures for emergency, and in The Fourth Military Medical University (2015), the unpublished manual *Regulations of Psychological Disorders Treatment during Wartime*. Psychological intervention projects with small group interventions as the core have also been established. In addition, knowledge from military psychological service was brought into the education and cultivation of military psychological works, and is considered important and indispensable.

Currently, military psychological services have become a great strength in accomplishing various non-war military operations such as anti-terrorist operations, relief work, security work, international peace-keeping, international rescue work, and other operations, for instance, Wenchuan Earthquake relief work in 2008, security work for the Olympic Games in 2010, Ya'an Earthquake relief work in 2013, security work for the National Anti-fascist Parade in 2015, and the Shanghai Cooperation Organization (SCO) Peace Mission 2016 joint Anti-terrorism military exercises (Wu et al., 2012).

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## Conclusion and Outlook

Military psychology in China is a youthful discipline, full of energy. The twenty-first century is the golden period for the development of Chinese military psychology with continued focus on the eight areas described. The rise of the Chinese economy and the rapidly growing military power of China provided the favorable conditions for the development of military psychology. China will continue to play its role in the field of mili-

tary psychological selection practice and psychological warfare research. In the future, research platforms will be established to examine the influence of military environments on mental health, military human factor efficacy, military training, psychological health, and to develop military standards in these areas. In addition, studies on the military organizational culture and mental health service will be further promoted. We are well aware that there is a continued need for the development of international military psychology research and the application of new psychological approaches. It is our goal to become a strong military psychology power through our research and evidence-based treatment efforts.

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