**New areas of scientific cognition**

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At present, the world's new military revolution is developing in depth, and weapons and equipment are becoming more long-range, precise, intelligent, stealthy, and unmanned, with battlefields constantly expanding from traditional spaces to new areas. So, what are new areas? We should have a correct and clear understanding of them.

New fields are a relative concept, and their connotations are constantly changing with the development of technology. The author believes that they can be understood from three aspects: First, newly emerging fields. That is, new artificial or redefined fields that did not exist before and were formed with the development of technology. For example, cyberspace is a new field generated by the development of network technology; the intelligent field is a field redefined by the development of artificial intelligence technology. Like information technology, it is integrated into all aspects of national defense and military construction, and overlaps with other fields. For example, the mesoscopic field and the microscopic field are special fields that have emerged with the development of quantum technology and nanotechnology. Second, objectively existing and newly involved spaces. These spaces have always existed objectively in the material world, but they were not involved or involved less in the past due to various conditions, and have only recently been developed and utilized. For example, space, outer space, deep sea, polar regions, underground and cognitive space. Third, new developments in traditional space fields. Some space fields have been recognized and utilized for a long time, but with the leap of technology, they have been promoted to new capabilities or new development directions. For example, electromagnetic space, previous communications and interference were mainly in the shortwave and ultra-shortwave ranges, but now they can be carried out in the microwave range. For example, in the biological field, with the development of biotechnology, the use of bio-enhancement technology can maintain personnel's combat capability for a long time and quickly restore combat effectiveness.

It is worth noting that we cannot infinitely magnify the capabilities and roles of new fields as soon as they are mentioned. After all, new fields are still in development and play three main roles in joint operations: First, the multiplication effect. The emergence and integration of new fields into the joint operations system have formed an amplification effect, which has multiplied the original combat capabilities. For example, artificial intelligence technology, which makes weapon systems have strong autonomy, greatly improves the speed and accuracy of operations. According to information, when artificial intelligence is used in intelligence information processing, the ability to identify targets is 80 times that of traditional human identification. Second, the leading role. Because new fields have special advantages in some aspects that traditional fields and traditional combat forces do not have, they are often used first in combat to create conditions and opportunities for subsequent operations. At the strategic and campaign level, space, network and electricity take the lead, pre-perceive the battlefield and first paralyze the enemy's reconnaissance detection, communication command, air defense system, etc., to create conditions for subsequent firepower strikes and offensive and defensive operations. At the tactical level or in specific combat operations, unmanned combat forces are often used as advance forces because of their advantages of not fearing casualties, not being tired and having high combat effectiveness. In offensive operations, they play the role of "kicking the door" and "breaking the door" through "soft and hard" strikes. The third is the complementary role. Joint operations based on the network information system are the mutual support of various combat spaces and the overall use of various combat forces. By leveraging strengths and avoiding weaknesses and complementing advantages, joint victory is finally achieved. New fields and traditional fields play a complementary role. In the combat space, space, deep sea, network, electromagnetic and land, sea, and air support each other to form a supporting and coordinated role. In terms of combat methods, new long-range precision strike weapons are combined with medium- and short-range combat forces to implement full-depth simultaneous operations; manned combat forces are combined with unmanned combat forces to implement man-machine integrated operations; network and electromagnetic combat operations are combined with conventional strike operations to implement "soft and hard" composite strikes.