

The Origin and Early Evolution of Rock Climbing

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ABSTRACT

Given the backdrop that rock climbing will make its Olympic debut in the coming 2020 Summer Olympics, the analysis of the historical context of its inception, birth and early development, will facilitate further exploration in this research field. Rock climbing was born of the modern mountaineering that began in the 1780s, and then became a new sport independent from mountaineering around the 1880s in a specific socio-economic, historical and cultural setting. The Lake District in northwestern England, the Dolomites in northeastern Italy, Saxon Switzerland in southeastern Germany and Fontainebleau in northern France represent major birthplaces of rock climbing. Amidst the origin and early development of rock climbing, the innovation of technical equipment serves as an important driving force for the development. Besides, the collision of rock-climbing ethics resulting from the difference in risk value has accelerated its evolution; and the climbers' relentless pursuit of a higher level of challenge has led rock climbing towards "sportification". The broad influence of early pioneers and climbing literature have contributed to the global development of rock climbing.

Keywords: rock climbing, origin, early development, mountaineering

1. INTRODUCTION

On August 4, 2016, rock climbing was officially accepted as a sport for the Olympic Games Tokyo 2020 at the plenary session of the 129th International Olympic Committee (IOC); on December 7, 2020, the IOC Executive Board reconfirmed the inclusion of rock climbing in the Olympic Games Paris 2024, and increased the number of medals and participation quotas. The inclusion of rock climbing in the Olympic Games has aroused widespread attention worldwide and triggered a new round of adjustment in the development strategies of national competitive sports, with countries scrambling to build a talent training system for rock climbing. Besides, the broadcasting of rock-climbing events has begun to appear frequently on major TV media, and the number of indoor climbing venues has increased dramatically. The sport of climbing was moving from its former corner to center stage. [1] To explore the development experience of the sport, this paper, with the history of rock climbing as the research object, presents an overview of the inception, birth and early development of the sport from

1780s to 1940s, aiming to elaborate the characteristics of the early development of the sport and provide theoretical basis and historical support for the in-depth study of the social and cultural aspects of the sport, so as to facilitate the further popularization and dissemination of the sport.

2. ROCK CLIMBING WAS BORN OF MODERN MOUNTAINEERING IN THE 1880S

2.1. Exploration and Alpine Scientific Expedition Gave Birth to Modern Mountaineering

Influenced by the Enlightenment and the bourgeois revolution, the new ideas of freedom, democracy and science gradually took root in Europe in the 18th century, during when people began to understand the world in a rational way [2]. While continuing the maritime exploration in the Age of Discovery, the flora and fauna, geological and mineral resources, and even unique landscapes of the alpine area also grew into the target of

exploratory expeditions by monks, priests and scientists. In 1760, Saussure, a Swiss geologist, arrived at the foot of Mont Blanc at the Franco-Italian border for scientific research and offered a reward for anyone who could find the route to the summit of Mont Blanc. It was not until 1786 that two indigenous hill tribes successfully summited Mont Blanc; and the following year, Saussure organized a group of 18 alpine guides to summit Mont Blanc for scientific research, which is recognized as the onset of modern mountaineering [3]. In the following 50 years or so, climbers initiated to travel frequently to the mountains for the purpose of climbing only, and peaks with altitudes of 3,000 to 4,000 meters and even higher were summited one after another, especially after the British arrived in the Alps in 1850, triggering a boom in pure climbing. The purpose of climbing for many British mountaineers was no longer for exploration of natural science, but the challenge of higher altitudes, the pursuit of recreation, and even the improvement their social status [4-5]. A large number of well-educated, aristocratic British men and their guides competed for the honor of being the first to climb to the top of the Alps. From 1854 to 1865, known as the “Golden Age” of mountaineering, 31 of the 39 major peaks in the Alps were successfully reached [6].

2.2. Difficulty Challenges Laid the Groundwork for the Differentiation of Rock Climbing Techniques

Frequent mountaineering activities set the stage for the development of rock-climbing techniques. The often-varying distances and rock walls of different exposed degrees in climbing routes, and sometimes even smooth walls with near-vertical, extremely small fissures, placed demands on the climbing skills of early mountaineers and sometimes required specialized targeted climbing training or the assist of certain climbing equipment [7]. Famous documented mountaineering events that used climbing techniques and equipment include Whymper and others in England in 1865, who hooked the edge of the rock wall through a hook on a rope as an aid and successfully summited the Matterhorn. The use of these techniques and equipment had allowed climbers to set records on further climbing difficulty and height time and again. The subsequent evolution of climbing techniques and related equipment operation as a part of mountaineering training further specialized development, laying the foundation for its differentiation from mountaineering [8]. As the major peaks in the Alps were conquered one after another, wealthy British climbers continued to look for other peaks and even climbed as far as the Himalayas; while climbers adjacent to the Eastern Alps had neither the qualification for expedition-style climbing nor were they satisfied with the traditional climbing routes anymore, but desiring to challenge some more difficult terrain and routes. In targeted climbing training, climbers are being enthusiastic about climbing

low and craggy rocks. In the 1880s, rock climbing, once an essential part of mountaineering, grew into a separate pursuit, leading to the divergence from mountaineering [9].

3. CLIMBING WAS FIRST BORN INDEPENDENTLY IN SEVERAL TRADITIONAL CLIMBING AREAS WITH SLUGGISH DEVELOPMENT

On the strength of a number of representative events, it is widely believed that climbing was formally born in the late 19th century in the Lake District in northwestern England, Saxon Switzerland in southeastern Germany, the Dolomites in northeastern Italy, and Fontainebleau in northern France [10]. The development of rock climbing in different places in this period also shows diverse characteristics due to different geographical and cultural backgrounds.

3.1. The Lake District in Northwestern England

The relatively flat landscape of the British mainland, with few large mountains throughout, led early British climbers to climb as far as the Western Alps. During the winter months when climbing in the area was difficult, however, climbers had to return home to find lower peaks for winter training for the purpose of maintaining and improving their climbing ability, including a variety of snowy gullies and chimney-type peaks [12]. In the 1860s, climbers began to return home to challenge the unclimbed peaks of the Lake District; and in the 1970s, more people realized that Britain’s many crags lent themselves to difficult technical climbing, when climbers began to turn their attention from hikes in valley to rocky ridges and shallow-angular slabs. In the late Victorian period, the Lake District turned into a gathering place for self-proclaimed “climbers” and “explorers”. In 1886, Haskett Smith, W. P. completed the climbing of Napes and Needle rocks in the Lake District by Free Solo. For the purely aesthetic and fun purpose of this climb, it was considered to be the first recorded sporting activity by mankind, marking the birth of rock climbing [14], and Smith has been hence called the “Father of Rock Climbing” in England [13]. Soon afterwards other young men followed in his footsteps and went climbing in the Lake District, creating what is known as the Golden Age of Climbing in the Lake District. By the end of the 19th century climbing for recreational purposes had gradually come to be fashionable [14].

Besides the results of the industrial revolution, the increased income level and leisure time of all classes in Britain, the rapid development of railroads further reduced the cost of travel and escalated the number of climbers. Although climbing in Britain stagnated due to the First World War, the subsequent massive unemployment caused by the world economic crisis in

1929 instead prompted some young people to participate in this low-cost activity. The Youth Hostels Association (YHA), launched in 1930, had over 83,000 members in ten years and began offering climbing courses in its hostels. The demand for climbing equipment increased accordingly, and equipment was invented such as the rash vest. Following that, by virtue of the issuance of The Access to Mountains Act of 1939 and The National Parks and Access to the Countryside Act of 1949, the normality of rock climbing activities was increased and the participation level started to extend downwards. In the 1950s, rock climbing was introduced into schools as an important part of “outdoor education” and even developed into a profession.

3.2. Saxon Switzerland in Southeastern Germany

The earliest non-Alpine climbing area in Germany was Saxon Switzerland, near Dresden, where the Elbe Sandstone Mountains provided a good environment for the emergence of “free climbing”. In 1864, five male gymnasts reached the summit of Falkenstein Peak, which, despite the use of ropes, ladders and other aids, was still considered the beginning of Saxon climbing because of its purely sporting motives [10]. In 1874, driven by the same motivation, O. E. Ufer and H. Frick successfully climbed Mönch near the town of Ratten in Saxony, consciously avoiding the use of ladders, picks, and other aids, making it the first unaided climb in Saxon Switzerland. This unassisted philosophy soon spread through the Elbe Sandstone Mountains, ushering in a new era of ethical rock climbing. In 1890, climbing started to develop systematically in Saxon Switzerland, and in 1894 Saxon Switzerland developed into a training area for alpine tourist climbs of the Mountaineering Association [15]. By World War I, almost all important peaks had been reached or new climbing routes opened up, and in 1903 there were more than 500 active climbers [16]. In order to assess and compare the technical level of climbers, the Saxon O. Schuster proposed in 1893 the 3-level climbing classification system, the first difficulty rating system and the first binding rule for the sport of climbing [17]. In 1908, R. Fehrmann published the first climbing guide entitled *The Saxon Swiss Climber*, which contained 400 routes on about 200 peaks, and established a 7-level difficulty system based on the original, setting the basis for the subsequent establishment of multiple difficulty levels [16]. In 1911, the Saxon Climbers Federation (SBB) was founded with advocating a “nature-friendly” climbing ethic. In 1913, the second edition of the climbing guide also introduced the rule that climbing shall be limited to natural breaks and that the rock surface shall not be altered. [18]

Rock climbing in Germany was also influenced by the two world wars. Following the stagnation of World War I, a large number of climbing clubs began to be

established, and the standard of climbing difficulty was increased to seven grades in the 1923 edition of the climbing guide, reflecting the great breakthrough of the period. However, when the Nazis seized power in Germany in 1933, climbing and other mountain sports were exploited to promote racism; after the war, several climbing clubs were destroyed due to strict regulation by non-military sports organizations, and it was not until the late 1950s that the situation gradually improved [19]. Nevertheless, the idea of “free climbing” still influenced the development of climbing worldwide. For example, in 1929, F. Wiessner, a pioneer of Saxon climbing, moved to the United States and brought this style to the Yosemite area, later known as the Mecca for climbers. The later popular sport climbing and even the “anaerobic climbing” in mountaineering all embody this idea of free climbing without relying on external forces.

3.3. The Dolomites in Northeastern Italy

Compared to the snowy peaks of the Western Alps, the lower altitude, dry and warm climate, along with the more exposed limestone cliffs that are less susceptible to seasonal influences in the Italian Dolomites provide an environment for the development of more pure rock climbing [20]. Owing to the geological and mining exploration and other scientific research that began in the 18th century, specialized inns and guides emerged in the region, and mountain tourism began to develop on this basis. Climbers from England, Germany, Italy and Austria came to the area to carry out climbing activities [21]. Located at the disputed area, Austria had already built some “via ferrata” for military purposes since the mid-19th century, which could be considered as the beginning of a kind of artificially assisted climbing, notwithstanding its different purpose from the climbing expedition. G. Winkler climbed the southernmost spire of the Dolomites’ Die Vajolettürme (later named the “Winkler Stone Tower”) unaided and without any equipment, which was regarded to be the birth of rock climbing in the Dolomites [12]. Following Winkler, rock climbing came to be trendy in the Dolomites and a new generation of climbers emerged, competing at a high level of skill to be the “King of the Rocks” of that era [23].

The Dolomites are also a center for debates regarding the ethics of climbing in terms of equipment and technique, since the particular geological setting and historical context provided some justification for the use of aids. In the first decade of the 20th century, the Italian guide Tita Piazz and others started climbing here extensively using rock spikes and other tools [22]. The Austrian Paul Preuss, who always insisted on “pure style”, criticized this in his article “Artificial Aids on Alpine Routes” published in 1911, which led to a series of heated debates, later known as the “piton controversy”. The “core issues” [23] of climbing ethics concerning the

boundaries of artificial aids, the value of risk, and climber education were the focus of debate, and were mapped in subsequent climbing developments. Despite the controversy, the new technique was widely promoted [24] and, under the constant refinement of Piazz and others, pushed the practice of climbing in the Dolomites to a higher level of technical difficulty. Even as a result, it got rid of the suppression of traditional climbing powers such as Britain and France, which opposed pitons for half a century, and gained the dominant position in the field of rock climbing during this period [25].

3.4. Fontainebleau in northern France

France, with its rich mountain resources such as the Alps, the Pyrenees and the Central Plateau, had formed mountaineering expeditions and other practical activities earlier. In 1492, Antoine de Ville, under the order of King Charles VIII of France, successfully climbed Mount Aiguille with simple hooks and ladders, which was reputed to be the earliest technical climbing event in history [32-34]. Unlike the elitist development in Britain, the Club Alpin Français (CAF), founded in 1874, was open to the general public and initially insisted on scientific expeditions as the “most legitimate reason” [29], but its large membership made it possible to divide itself internally. The first members who were interested in climbing beyond the goals of scientific expeditions began climbing in 1897 in the boulder-strewn Fontainebleau region [30]. The boulders of Fontainebleau were lower than the great walls of the Lake District, but required more skill, often demanding difficult dynamic movements, from which the modern climbing program is thought to have originated [31]. In 1906, the Groupe des Rochassiers (GDR), a self-organized group of members of the CAF-supported “hiking team”, initiating structured and systematic climbing training aimed at perfecting their climbing skills. The Fontainebleau region gradually grew into the “perfect training base” for the non-climbing season [32].

Equipment and climbing techniques were also developed in France, such as rock chisels and expansion bolts, which were created in France in 1927 and used by their inventor, L. Grivel, on the first climb of Le Père Éternel, as new tools that “changed the nature of climbing in the future” [33]. The form of sport climbing that later became controversial in the United States was also thought to be strongly associated with these techniques coming out of France. However, rock climbing remained an appendage of mountaineering in France for a long time, and the “glory” belonged to the Alps and Himalayan peaks, not to the skills on the rock. It was not until the 1970s that climbing came to the attention of the general public and the media, and in 1982 the documentary *La Vie Au Bout Des Doigts* brought climbing into the spotlight for the first time. 1985 saw the creation of the Fédération Française d’Escalade (FFE)

and the proliferation of climbing competitions and artificial walls. Climbing began to develop as an official sport in France today.

4. MAIN FEATURES AND INFLUENCES OF THE ORIGIN AND EARLY EVOLUTION OF ROCK CLIMBING

4.1. Innovation of Climbing Technical Equipment was an Essential Driving Force for the Development of Climbing

Early climbing equipment was basically just ropes, from which climbing diverged and went to rocky crags, making climbers suddenly more dependent on technical equipment. The early development phase of climbing was a period of great development of climbing technical equipment, and technical equipment developed in the Eastern Alps and elsewhere spread gradually through Europe and North America, prompting many landmark difficulty achievements in Europe and the United States. At the same time, the upgrading of materials and industrial technology in the two world wars led to the birth and improvement of new climbing technical equipment, such as lightweight aluminum piton that were easier to carry than pre-war iron ones, and nylon ropes invented during the war that brought more safety and protection than hemp ropes. The level of risk in rock climbing was greatly reduced [33], and climbers were able to challenge themselves to higher levels of difficulty with confidence, which also led to increasing levels of skill. The invention and innovation of technical equipment has driven the development and popularity of climbing and has been the most important driving force in the process of the development and evolution of the sport. It can be said that the history of rock climbing is a history of innovation of climbing technical equipment.

4.2. Collision of climbing ethics resulting from risk-value difference has driven the differentiation of climbing sports

Early forms of climbing were mostly unprotected free climbing, and this form of climbing also best reflected the self-challenging and adventurous spirit of climbing at its birth. The advancement of technical aids and equipment for climbing also set the stage for later debates and conflicts over the use of protection techniques, difficulty ratings, and environmental protection. Climbers engaged in long-standing discussions about whether and how to use technical equipment, building an evolving “style” and “moral” ethic of climbing [34]. These discussions and disagreements about the value of risk have led to the emergence of sub-cultural groups within climbing culture based on different conceptions of practice. The sport of climbing has evolved into different forms of climbing such as traditional climbing, free climbing, big wall

climbing, solo climbing, and competitive climbing. Almost all major developments in technical equipment have sparked intense debates about risk and challenge, and the development of new styles and values in climbing have emerged from these conflicting processes. Thus, the history of rock climbing is also a history of human debates over the value of risk.

4.3. Relentless pursuit of higher levels of climbing difficulty levels laid the foundation for the birth and development of competitive climbing

Rock climbing, independent from mountaineering, was born with a certain “competitiveness” [35], just like the “first ascents” pursued by early mountaineering, and the pursuit of route difficulty turned into the new focus of this competition. Following the Saxon in 1893, a number of different standard difficulty assessment systems emerged in other regions and were enriched in practice, with climbers tending to be increasingly focused on difficulty and even a “cult of rank” [36], and competition among climbers for first ascents on routes of varying difficulty was in full swing. In the late 19th and early 20th centuries, advances in pitons, ropes, and descent techniques also led to safer technical guarantees for climbers to compete in difficulty, while the climbing reaching unprecedented levels of difficulty. The competitive nature of climbing grew to be more prominent, initiating the evolution of sportification, and thus laying the foundation for the birth of competitive climbing in the former Soviet Union and its spread across Europe after World War II. Therefore, the history of rock climbing is also a history of human struggle to challenge the difficulty of climbing.

5. CONCLUSION

Climbing mountains and rocks was originally a human survival skill in nature, and climbing in the “sporting” sense was birthed in the modern sport of mountaineering, which began in the 1780s. During the development of mountaineering to higher altitudes and higher difficulties, rock climbing was further strengthened as a skill training for mountaineering, and techniques and equipment developed in a more professional direction, allowing climbers to set new records for difficulty and height of climbing time and again, while gradually turning into an independent pursuit outside of mountaineering for Europeans. In the 1880s, rock climbing was born in traditional climbing areas such as the Lake District in northwestern England, the Dolomites in northeastern Italy, Saxon Switzerland in southeastern Germany and Fontainebleau in northern France. In its early development, rock climbing showed great vitality with its popularization in a specific socio-economic and historical-cultural context due to its profound philosophical and cultural connotations. The

history of rock climbing is a history of innovation of technical equipment, a history of human debate over the value of risk, and a history of human struggle for self-challenge. Rock climbing will usher in a new prospect of development following its debut in the Olympic Games.

AUTHORS' CONTRIBUTIONS

Beifeng ZHU contributed significantly to analysis and manuscript preparation.

Ruizhi CHEN helped perform the analysis with constructive discussions.

Yuan LI contributed to the conception of the study.

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