Anna Kacperczyk
University of Lodz, Poland

Between Individual and Collective Actions: The Introduction of Innovations in the Social World of Climbing

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Abstract This article, which is based upon the findings of a seven-year research project concerning the social world of climbing, discusses climbing as an organized social practice that possesses a strong historical dimension and collective character. It examines the relation between individual participants and that social world as a whole, and it accepts that an individual's personal life may be inscribed in the development and formation of that world in two ways. These are 1) a given social world imposes the behavioral patterns, normative rules, institutional schemes of actions, and careers upon participants that characterize their identities and actions; and 2) the actions of an individual participant trigger significant change in that world. I am particularly interested in those unique situations in which when a participant induces a change that affects a given social world (or a sub-world) as a whole, and discuss two examples of this relation, namely, the history of designing and creating climbing equipment, and setting new standards of climbing performance. Briefly stated, innovative solutions are born in conjunction with particular climbing actions that are either promoted or hindered depending on whether or not the vision of the primary activity associated with those solutions was accepted by the majority of participants. The dynamics and transformations of the social world in question thus rely upon the activities of exceptional individuals who, as pioneers, innovators, and visionaries, attain mastery in performing the primary activity of that world and set new standards of performance for others. A new mode of acting—in order to be collectively adopted—must be accepted as both valuable and morally justified by all participants.

Keywords Social Worlds; Climbing; Mountaineering; Innovations; Individual; Collective Actions; Technology; Performance

Anna Kacperczyk is an Assistant Professor of Sociology at the University of Lodz. Her research has addressed palliative and hospice care in Poland (2006), the sustainable development of an Amazonian village (2013), the social world of climbing (2016), and trash (2019). Her interests include social world theory and the methodology of social research, particularly the question of the position and role of the researcher in the investigation process. Symbolic interactionism comprises the primary theoretical framework for her work, and she utilizes ethnography, autoethnography, and the methodology of grounded theory during her field research. Kacperczyk is a Chairperson of the Section on Qualitative Sociology and Symbolic Interactionism of the Polish Sociological Association and a member of the board of the European Society for the Study of Symbolic Interaction. She currently serves as an associate editor and cover designer for *Qualitative Sociology Review*.

email address: anna.kacperczyk@uni.lodz.pl

This article[1] is based upon the results of a seven-year research project on the social world of climbing. From March 2007 to December 2014 I explored and endeavored to describe this particular social world in an effort to identify the processes, actions, and interactions that take place there and support its existence (Kacperczyk 2012; 2013; 2016). I also sought to generalize my reconstruction of the complex processes through which this world takes shape and is maintained so that my findings would also cast light on any social world in general.

Tamotsu Shibutani (1955:566) argues that each social world

> is a unity of order, a universe of regularized mutual response…an area in which there is some structure which permits reasonable anticipation of the behavior of others, hence, an area in which one may act with a sense of security and confidence. Each social world, then, is a culture area, the boundaries of which are set neither by territory nor by formal group membership, but by the limits of effective communication.

Consequently, the social world of climbing does not comprise group or community membership in the strict sense, but is rather a dynamically changing formation of people engaged in mountaineering and climbing activities. This social entity with fluid limits consists of climbers and mountaineers who are

> equipped with suitable competences and skills, having the technology and special equipment needed to carry out this activity and share the resources that enable them to achieve their goals. They thus create a common ideology concerning how to act, and even if they do not agree on every point, even if they differ locally and technologically within the area of their activity, they nonetheless feel a unique commitment to maintain this activity, devoting their time and energy to that end, sometimes at the expense of other areas of their life. [Kacperczyk 2016:696]2

The range and scope of my investigation refer to this loosely outlined social unit and its various internal segments. The process of entering and exploring this extraordinary milieu that was previously unknown to me involved undertaking a number of diverse research activities that included interviewing, conducting participant observations, engaging climbers and others in conversation, visiting climbing gyms, and going to rock areas in Poland. The data gathered in this investigation primarily refers to predominantly Polish climbers and mountaineers with whom I had direct contact during the study.

A large portion of my research is more generally associated with the essence of climbing and, as a result, displays universal characteristics shared with comparable geophysical contexts. Since climbing exceeds territorial boundaries, being undertaken within international groups and in remote or isolated locations, the documents and other materials examined in this project are not restricted to the Polish climbing community, but are also relevant

[1] This article is an extended version of the author's presentation at the VIIth Conference of the European Society for the Study of Symbolic Interaction (EUSSSI), *Integrating Interactionist Traditions: Building Theoretical, Methodological, and Disciplinary Bridges in the Study of Everyday Life*, which was held July 04-08, 2016, in Topola, Bulgaria.

[2] All translations in the text are by the author unless otherwise indicated.

to actions undertaken outside of Poland and by individuals other than Poles (Kacperczyk 2016:696). I spent over 800 hours in the field, produced over 300 documents (field notes and observation reports), conducted hundreds of informal discussions and 30 in-depth interviews, and made 23 audio recordings of public lectures about climbing and mountaineering, all of which served as a basis for further coding and analysis.

My approach combined elements of ethnography, autoethnography, biographical method, discourse analysis, and netnography. All of these research strategies were encompassed by and subjected to the methodological procedures of grounded theory (Glaser and Strauss 1967), including its main guidelines of theoretical sampling and the constant employment of the comparative method.

An important element of the data sources used in the research process, particularly the analysis presented in this article, consisted of extant textual and visual materials. These comprise biographies, memoirs and recollections of pioneers and innovators in climbing, autobiographies of famous mountaineers, published interviews, articles, historical discussions, climbing manuals, guides, and expedition reports, as well as pictures, lithographs, photographs, and documentary films.

Climbing as Primary Activity

The objects of my analysis were actions and processes in the social world of climbing, which was broadly defined as a space of social practices and interactions woven around the *primary activity* of climbing. This primary activity itself is complex and takes place in a variety of forms that divide the social world in question into more or less distinct segments, such as mountaineering, rock climbing, bouldering, ice climbing, big-wall climbing, and dry-tooling. Climbing is accompanied in each of these sub-worlds by numerous additional activities that influence and condition the primary activity.

These additional activities may be taken into consideration on both individual and collective levels. For instance, collective actions are undertaken by individuals or groups on behalf of the community and in the common interest of climbers. Prominent examples are passing on know-how and training beginners; developing climbing technology; fighting for the preservation of free access for climbers to mountains and rock areas; the self-organizing of the climbing community (creating institutions, associations, and mountain clubs); and the collective maintenance of discursive space, which includes writing about climbing, creating visual representations of the space of climbing, filming climbing actions, oral stories, public lectures and presentations, conversations, and theorizing about climbing. Climbing is supported on the level of individual actions by training and physical conditioning; traveling; fundraising; acquiring climbing equipment; documenting one's own actions; presenting one's own climbing activities to others; and so forth.

Although none of these actions constitute climbing itself, they remain crucial for the reproduction of the culture, ideologies, and modes of action of mountaineering. Both individual and collective auxiliary activities are necessary preconditions for climbing

that make it possible to maintain and reproduce this social world as a whole. However, climbing itself remains the central and the most obvious activity within this world (Strauss 1978:120).

Every act of climbing involves using one's body in order to make progress in scrambling on a rock or mountain. We can distinguish three essential aspects of climbing when we view it as individual activity: 1) the ascent is performed through the movements of one's own body; 2) protection practices, such as belaying techniques and various forms of self-protection, are employed to make the ascent safe; and 3) sudden and undesired descents—falls—which may occur during ascending. Climbing means gaining altitude and accumulating kinetic energy that is released at the moment of the fall. This triad of ascending, protecting, and (potentially or actually) falling concerns anyone who climbs (Kacperczyk 2016:122).

In addition to being an individual act of ascending, climbing is also a broad socio-cultural phenomenon that encompasses the organized activity maintained in rock areas and mountains by people who explore a given site, create more effective methods for such exploration, accumulate practical knowledge about climbing, and spread their own vision of the activity of climbing. It is an organized social practice that has a strong historical dimension and collective character. In this sense, we may speak about a social world that is formed by people who have a common commitment to engage in this activity, "sharing resources of many kinds to achieve their goals, and building shared ideologies about how to go about their business" (Clarke 1991:131).

The terms first used to describe this social world were *alpinism*, *andinismo*, *himalaism*, *pireneismo*, and *taternictwo*, each directly referring to the collective activities that took place in a particular mountain range. *Alpinism* initially meant human activity undertaken in the Alps; *andinismo* designated climbing in the Andes; *himalaism*, climbing in the Himalayas; *pireneismo*, climbing in the Pyrenees; and *taternictwo*, climbing in the Tatras (Kacperczyk 2016:135). The terms *alpinism* and *mountaineering*, which are used interchangeably today, possess the broadest meaning of climbing undertaken in mountains regardless of the location. They thus embrace all types of mountain activities (Kacperczyk 2016:135).

The culture of climbing was constructed in particular locations that became the basis for exploration and organizational activity. As a result, these particular spaces became a source of identity for individual participants who felt a passion for climbing and—at the same time—a fondness for the particular locations in which the action of climbing takes place.

The Relation between Unique Participant and Social World

In an ontological sense, a given social world does not exist without participants. When these participants act and communicate in respect to a given primary activity, they became parts of the social world in question and help maintain its existence. However, the relation between individual participants and a social world as a whole is shown to be more complicated when we take it into consideration from a long-term perspective.

I assume that individual's personal life can be inscribed in the development of a given social world in two ways: 1) the social world imposes the behavioral patterns, normative rules, institutional schemes of actions, and careers that mark the identity and actions of the participants, and 2) the actions of individual participants trigger significant changes in that world. In the latter case, the biography of an individual becomes interwoven with the collective history of the social world and affects its entire development. Insofar as the latter is of particular interest in the present discussion, I will examine instances of how designing new climbing equipment and setting new standards of climbing performance can be useful in casting light on this issue.

Designing Climbing Equipment

The history of designing climbing equipment is closely connected with the development of the world of climbing as a whole. The paramount points of interest in this regard have primarily been associated with the appearance and refinement of new tools for safety in climbing. The main technological innovations in this regard include 1) climbing ropes, 2) pitons, 3) nuts (chockstones, hexes, camalots), 4) carabiners, 5) ice axes, 6) crampons, 7) climbing shoes with super-friction rubber soles, 8) outdoor clothing made from synthetic materials, 9) improved tourist and camping equipment, and 10) artificial climbing walls for competition and training (Pagel 2000:121; Kacperczyk 2016:363). The development of mountain rescue techniques and equipment has also been an important area of innovation.

The development of safety equipment was a crucial issue, not least because surviving—or avoiding—a fall made it possible for a climber to try an ascent again and thus potentially improve their skills. Any improvement introduced into any dimension of the triad comprising the act of climbing (ascending, protecting, falling) strengthens and supports the other dimensions as well. Consequently, the use of tools to improve safety and either avoid or minimize the danger of falls meant that climbers could work on techniques for ascending and improve their physical skills,[3] leading to a further specialization of climbing techniques that made it possible to attain more ambitious and difficult goals. In turn, more difficult challenges led to a greater need for refinement in climbing equipment, placing an emphasis upon advanced development.

I will now briefly address the development and use of crampons in order to illustrate the process of how new climbing tools were introduced.

Crampons—metal plates with spikes fastened to boots to facilitate walking on ice and steep terrain—were the first artificial means in history to be used

[3] A somewhat analogous process took place in the social world of the martial arts when the traditional rules of Ju-Jitsu were replaced with the rules of Judo, a development initiated by Jigorō Kanō (1860-1938) in the late 1800s. Ju-Jitsu was not initially designed solely for defense, but instead had the aim of reducing the possibility of counter attack to a minimum by effectively destroying the enemy. Every technique was allowed for attaining this goal. Kanō came to view these rules as archaic and out of touch with the times, and consequently developed new techniques for Ju-Jitsu that would replace those that were dangerous for life and physical well-being, which came to be defined as "prohibited techniques." As a result, participants were able to improve their movement techniques not only because they could survive the competition, but also because avoiding significant injuries meant they could train more frequently, more efficiently, and improve their skills.

in the mountains, but they also might very well have been the last tool that was universally accepted by mountaineers.[4] The idea of using them first appears in ancient times. For example, the oldest four-teeth models discovered in Hallstadt, Bad Reichenhall, and Carinthia date to around 500 years before Christ (Roszkowska 2007:135), while the earliest written evidence of using tools of this kind is found in Strabo's (64 or 63 BC-c. AD 24) *Geography*, in his description of the Caucasus Mountains. Strabo states that

> The summits of the mountains are impassable in winter, but the people ascend them in summer by fastening to their feet broad shoes made of raw ox-hide, like drums, and furnished with spikes, on account of the snow and the ice. They descend with their loads by sliding down seated upon skins, as is the custom in Atropatian Media and on Mount Masius in Armenia; there, however, the people also fasten wooden discs furnished with spikes to the soles of their shoes. Such, then, are the heights of the Caucasus. [Strabo 1924, vol. XI:241]

Tertullian (160-c. 240) remarked that boots with spikes were invented by spies in order to safety move on difficult terrain, and that they were in fact called "spy shoes" (*călĭgae*, *elevatae*, or *seculatoriae*).[5]

In all cases, however, their usefulness was the reason for their currency in that they facilitated the everyday lives of those living in mountainous areas. They came to be used not as aids in "mountaineering," but rather in activities "performed in the mountains."

Crampons were widely used in sixteenth-century Europe by woodsmen, huntsmen, and crystal hunters, who equipped themselves with four spikes fixed under their shoes as forefoot tools that provided some traction when crossing glaciers or ice. Such crampons served the very pragmatic purpose of operating effectively in mountainous terrain, when walking on glaciers or scrambling were a part of other operations and could not yet be treated as mountaineering.

The essence of mountaineering is to overcome difficulties and conquer summits, and its official beginning is considered to be August 08, 1786, when Jacques Balmat and Michel-Gabriel Packard completed the first ascent of Mont Blanc. This is regarded as the first time in history when the primary objective of activities in the mountains was to reach the summit, and it required resolving technical challenges, defeating the difficulties of the terrain, dealing with the fear of spending a night on a glacier, and, above all, finding a path that led to the top (Ardito 2010:24). This key event thus displayed the essence of alpinism. Although the majority of mountain expeditions in eighteenth and nineteenth centuries had other aims as well, particularly scientific exploration in the fields of topography, cartography, botany, zoology, glaciology, geology, and meteorology, the conquerors of Mont Blanc viewed

[4] The Grivel's company's webpage summarizes the history of crampons as follows: "The use of crampons has always been the source of controversy. They were probably the first tool, or the first artificial means, used to cope with the difficulties of mountain terrain and simultaneously they were also the last tool to be universally accepted and used." See: *The History of the Grivel Company*.

[5] An early visual exemplification of this idea can be found on the Arch of Constantine the Great that was constructed in Rome at the beginning of the fourth century A.D. See: *The History of the Grivel Company*.

mountain activity as worthy of being undertaken simply for its own sake.

During the European Renaissance, mountains become a location where artists, poets, writers, and scientists would wander and hike. It was at this time that the Swiss theologian and classicist Josiah Simmler (1530-1576) wrote the first book devoted entirely to the Alps, *Vallesiae et Alpium descriptio* (1574), in which he provided extensive descriptions of the alpine natural environment, including such phenomena as glaciers and avalanches. Simmler also recommended the use of glasses to protect one's eyes from the glaciers and the snow, and he made the first contributions to the literature concerning the alpenstock,[6] crampons, and snow shoes as important tools for mountaineering (Hajdukiewicz 1998:36).

Useful crampon designs emerged in the nineteenth century, with more complete versions appearing in the second half of the century that covered the entire sole of the shoe and had some form of articulation.[7] Mountaineers, however, continued to prefer shoes equipped with spikes. The technique of attaching hobnails to boots and shoes had become very sophisticated at that time, and climbers could choose from a wide selection produced by Tricouni. As a result, climbers still rarely used crampons (Roszkowska 2007:135).

We should note that people engaged in mountain activities expressed a variety of opinions about crampons. For example, highlanders living in the Tyrol adopted them enthusiastically, while English mountaineers completely refused to use them. The English "purist" C. D. Cunningham wrote six pages about ice axes in *The Pioneers of the Alps* (1888), but provided only one short comment about crampons.

> Crampons, which I presume a mountaineering purist would look upon as "artificial aids," are never used in the Alps and are only seen in the Tyrol. [Cunningham and Abney 1888:47]

Edward Whymper in his *Scrambles Amongst the Alps* also declared that crampons were artificial aids that were not dependable on dangerous slopes.

> I do not believe that the use of the rope, in the ordinary way, affords the least *real* security upon ice-slopes. Nor do I think that any benefit is derived from the employment of crampons…I only feel comfortable with them on my feet in places where they are not of the slightest use, that is, in situations where there is no possibility of slipping…All such adventitious aids are useless if you do not have a good step in the ice to stand upon, and if you have got that, nothing more is wanted except a few nails in the boots. [Whymper 1871:351]

Clinton Thomas Dent (1892:73) remarks in the same vein that

> Crampons, or climbing irons, do not find much favor with English mountaineers, and have been spoken of contemptuously on many occasions. They are sometimes branded as artificial aids, a vague term, but implying great disrespect.

[6] The alpenstock, a precursor of the ice axe, resembled a long wooden stick, typically being a perch made of hazel or a bamboo rod with an iron spike at one end. It was used on glaciers and snowfields for support and balancing.

[7] See: *The History of the Grivel Company.*

This open rejection of crampons stood in evident contradiction to their common use in the Tyrol, which may confirm the supposition that the reason for these differing views resided upon differing understandings of mountaineering as an activity. Using crampons was an obvious and pragmatic part of everyday life for those who lived in the mountains, while those who climbed the summits as a form of leisure-time challenge, as did the English, regarded crampons as something that not only made climbing too easy, but perhaps even changed the essence of the activity. Mountain guides working in the Alps, who comprised a third group, also expressed misgivings concerning the usefulness of the tool. Fiorio and Ratti cited Mereur in this regard, who observed that

> seeing the extensive use that the Tyrol make of these tools, it is difficult to understand why they are unknown here. The fact is that the guides have an instinctive repugnance for these tools. [Fiorio and Ratti 1889 as cited in *The History of the Grivel Company*]

At that time the boots used for mountaineering were typically hobnailed in order to ensure a good grip in steep terrain, but they also offered something more than safety—hobnails were very useful for guides when they were cutting steps for their clients. Emil Zsigmondy, an Austrian physician who was an excellent alpinist, remarked that using crampons might completely change the image of alpine guides and the character of their work insofar as there would no longer be a need to cut steps in ice—which was an important and very impressive part of what they did. Briefly stated, crampons could render cutting steps pointless.

> [T]he guides at Zermatt should not use crampons, because as it would no longer be necessary to cut steps in the great walls of ice, it would diminish the reputation that the mountains have for thousands of travelers who are always astonished by the hundreds of steps that need to be cut. [Zsigmondy1885 as cited in *The History of the Grivel Company*]

Contemporary observers thus confirmed that crampons were a source of controversy, and that the interests of the mountain guides were the main reason for their rejection. To gain admiration in the eyes of their customers, and to impress or even shock them with the enormity of the work they did with ice, the guides used Tricouni nails and chose the ice axe as their only tool. But, this was not simply an issue of how guides sought to present themselves to their clients insofar as cutting steps and fighting the ice were an integral part of the idea of mountain activity at the time. Furthermore, the quality of the steps cut testified to the mastery of the guide and served as what might be regarded as his signature. The main vision of mountain climbing cultivated at that time centered upon the great amount of work done to cut steps in snow and ice, whereby the ice axe was viewed as the main symbol of mountaineering. The rejection of crampons symbolized a different way of acting that the guides did not regard as "true mountaineering."

The interests of the guides clearly constituted an important element of this conflict, particularly in light of the fact that alpinism was conducted mainly with the assistance of local mountain guides until the end of the nineteenth century. It was not until the beginning of the twentieth century that "guided

mountaineering" became obsolete and unassisted activity in the mountains began to be promoted (Kiełkowscy 2003:40).[8] The sports version of mountaineering, in which the climber independently accomplishes the ascent to the summit, first became dominant in the Alps.

Views concerning crampons were changed through the actions of an important forerunner of modern developments, Oscar Eckenstein (1859-1921), an English engineer and mountaineer known for his work and research concerning climbing equipment. The ten-point crampons he designed, "whose only drawback was their weight, about 3 lb. a pair" (Blakeney and Dangar 1960:75), were described as having

> the merit of being the only claw at the present time in which both the metal is rightly wrought and the points are shaped and placed under the foot with any scientific regard for their use. [Young 1920:288]

Eckenstein himself was noted to have remarked that

> thanks to the use of his crampons he did not cut more than twenty steps in all over a period of twenty-five years, apart from one unfortunate day when he inadvertently took someone else's crampons instead of his own. [Young 1920:288]

Eckenstein published two articles detailing the results of his own research concerning the manufacture of crampons, their systematic employment, and the remarkable feats one could perform with them.[9] The *Manuel d'Alpinisme* maintained, however, that his innovation did not

> lie in the technical perfection of the crampons, but rather in the spirit of courage and innovation with which he defined their use…his major contribution has been of a moral nature. [Club Alpin Français/ GHM 1934][10]

This contribution ultimately consisted of the faith that mountaineers would accept his inventions. Eckenstein was an engineer who knew the latest methods of production and was able to calculate and prepare professional models, while also being an active and experienced mountaineer who was aware of the practical usefulness of crampons in mountainous terrain. He was thus unique in that blacksmiths had typically dealt with the production of climbing equipment, constructing them in accordance with their own ideas and conceptions even

[8] Unguided climbing, which was promoted by particular mountaineers, gradually developed during the second half of the nineteenth century. Its keenest proponent was Stephan Steinberger (1833-1905), who conquered over 400 peaks, many of them solo or in winter, during the ten-year period of his mountaineering activity (1847-1857) (Kiełkowscy 2013:734). In 1870, Arthur Gilbert Gridlestone published *The High Alps without Guides*, in which he "endeavored to point out the advantages of mountaineering as a means of recreation, and the possibility of indulging in it to a very great extent without the cost or the annoyances of professional assistance" (Gridlestone 1870:v). In 1896, the Austrian parliament debated a ban on climbing without a guide and concluded that it was too dangerous—and thereby supported the interests of the guides. The material situation of mountaineers also played a role in the development of unguided climbing, with the social cross-section of the environment being changed. While climbers had formerly comprised primarily wealthy representatives of high society with the free time and means necessary to practice climbing, they came to consist of students and the working intelligentsia during the twentieth century (Kiełkowscy 2003:22).

[9] The articles were published on July 20, 1908, and June 5, 1909, in the *Ostereich Alpenzeitung*.

[10] See: *The History of The Grivel Company*.

though they were hardly familiar with mountain crafts (see: Roszkowska 2007:138).

Eckenstein faced strong resistance to crampons from the mountaineering community, and he had to devise unusual means to promote their use. For instance, Eckenstein arranged a walking competition for guides from Courmayer, which was held on the Brenva glacier on June 30, 1912, with the idea of displaying the advantages of crampons. The guides were induced to participate using crampons, and they were ultimately convinced of their value. The *Manuel d'Alpinisme* remarked that "Nobody dared to use crampons before Eckenstein, but afterwards everyone trusted them" (Club Alpin Français/GHM 1934). Ten-point crampons thus came to be accepted by the climbing community and helped greatly in many mountain successes.[11]

This was not the end of the story, however. In 1929, Laurent Grivel invented 12-point crampons by adding two front points that made possible a new type of movement on ice walls—the front points meant that the climber could set his body frontally to the wall. This new technique was fundamentally different from that associated with 10-point crampons in which the crampons spikes were directed downwards, forcing the climber to place his feet sideways to the wall and bend his ankles into an unnatural position. The introduction of 12-point crampons thus initiated the battle between "front-on" and "side-on" techniques. The second volume of *Manuel d'Alpinisme* describes how

> the smith Grivel from Courmayeur produces crampons with 12 points—they are…very useful in helping to overcome those short passages of difficult ice that one finds on glaciers without cutting steps or twisting ankles; or to surmount steep slopes of hard snow, particularly in terminal crevasses. This type of crampon can be especially useful for those who have ankles with limited mobility. However, the front points do not seem to be useful without committing imprudence on sheet ice…Although mountaineers who have good ankles and do not suffer from continual pressure will gain no advantage from this type of crampon, they will be very useful for the others. [Club Alpin Français/GHM 1934, Tome II]

An opposing example of how an individual can hinder the evolution and spread of new climbing techniques is provided by Armand Charlet (1900-1975). Charlet was a very talented French mountaineer who authored many successful climbs and innovations in mountaineering, but he stubbornly refused to use crampons with front teeth (Jouty and Odier 2007:118). It is believed that he owed his legendary speed and freedom of movement on ice to the extraordinary flexibility of his ankles (Jouty and Odier 2007:118-119), which enabled him to maximize the efficiency of the side on technique. However, Charlet's renown as a consummate ice climber, along with the prestige of the École Nationale de Ski et d'Alpinisme (ENSA), delayed the adoption of 12-point crampons in French alpinism for years (Jouty and Odier 2007:510) because of the influence his conservative attitude had upon ENSA students.

[11] Toni Schmid (1909-1932) related how much he appreciated using ten-point crampons in the first ascent of the North Face of the Matterhorn in 1931. Although they caused ankle aches, he and his brother Franz decided that their advantages outweighed the strength and time needed to cut steps during climbing (Roszkowska 2007:139).

Crampons thus became a *boundary object* and a point of contention, resulting in a clash of ideas about how to climb—with the older 10-point crampons or the new 12-point ones. This became a battle between the *French technique* of moving on steep ice walls and the *front-pointing technique*. It was also the beginning of the gradual evolution of the world of ice climbing, which developed into a new autonomous segment of climbing. But, the rejection of 12-point crampons by traditionalists marked the limits of the "old world" of climbing, and it could not stop new innovations that strengthened the separation process and accumulated the potential necessary for further changes. In the end, the gradual acceptance and trust in crampons was decided by the great ascents made with their use.

For instance, the value of 12-point crampons was clearly demonstrated by the ascent of the North Face of the Eiger on July 21-24, 1938. In a four-member team consisting of Heinrich Harrer, Fritz Kasparek, Anderl Heckmair, and Wiggerl Vörg, the first two climbers had only one pair of 10-point crampons between them while the others were both equipped with modern 12-point crampons. This led to significant differences in the methods used within the team and their effectiveness. Harrer (1998:94-95) in *The White Spider* relates:

> It was only now that we realized to the full what a mistake we had made in leaving my crampons behind. Fritz countered the error by a tremendous output of energy, as he built a positive ladder of steps. It was amazing to see how expert with his ice axe was this best of all Vienna's rock climbers. For hours on end he swung it rhythmically to cut step upon step, resting only when he stopped to safeguard me up them. And the steps were so good that my claw nails gave me excellent holds in them…Speed is the essence of modern climbing; steady, slow progress that of the classic past. We were naturally taking longer because we were using the technique of the past…Just before the rocks separating the Second from the Third Ice Field, I looked back, down our endless ladder of steps. Up it I saw the New Era coming at express speed; there were two men running—and I mean running, not climbing—up it…These two were the best of all the "Eiger Candidates"—Heckmair and Vörg—wearing their twelve-pointer crampons. I felt quite outmoded in my old claws.

The international debate on 12-point crampons finally came to an end under the pressure of facts and the indisputable efficiency of the new equipment. Crampons, whose introduction modified how mountaineers acted, were thus completely accepted as a normal part of a climber's equipment. Today's crampons are specialized devices used in various situations and for various tasks, dedicated to specific disciplines within climbing and mountain tourism.

Innovative solutions that were born in conjunction with particular climbing activities were promoted or hindered depending on whether the vision of the activity associated with them was accepted by the majority of participants in the social world of climbing. But, while the development of climbing technology is a collective process in the sense that all participants have to accept a given invention and begin using it, this process remains very individualistic at its roots.

The vast majority of innovations were either created by climbers themselves, or directly inspired by them. Devising new tools was initiated from the bottom up by individual participants in the social world of climbing who were driven by their personal ambition to conquer a particular climbing route. Invention was thus an element of their tactics, and it primarily grew from their desire to complete a given project and increase their own chances for more effective action in the mountains. Important innovations in climbing have always been born within the context of action, with the aim of either doing something new that no one has even done before, or doing something in a new way. This is made possible by a climber's own unique skills—often at the intersection of two social worlds, such as blacksmithing and climbing. Moreover, the creative inventiveness of the greatest innovators is typically generalized and displayed in numerous aspects of mountaineering. Great creators usually do not stop at a single invention or a one-time innovation, but rather introduce modifications in a number of different spheres of climbing.[12]

The brothers Jeff, Greg, and Mike Lowe, who have developed many innovative climbing projects and invented new equipment, have been active climbers who are recognized in the history of climbing for their groundbreaking achievements. Jeff Lowe (1950-2018)—a pioneer in alpine style and the father of modern ice climbing and mixed climbing—was not only honored with numerous prizes and awards, but also exerted significant influence upon mountaineering through his publications. Such climbers compensate for a given lack of proper equipment with their own inventiveness and entrepreneurship, quickly transforming their home workshops into successful companies producing climbing and outdoor equipment. We should note, however, that their climbing ambitions are the driving force behind their inventiveness, and that these ambitions remain primary to their later business success in mountaineering-related activities. The individual motivation for climbing leads to the development of the entire world of climbing because of the ways in which it feeds and enriches climbing with new ways of acting and new means for carrying out tasks that once were impossible to imagine.

Collective entities have also participated in the process of developing climbing technology. These include companies that produce equipment or supply semi-finished products, owners of patent rights, media about climbing that contain equipment reviews and advertising, as well as the International Federation of Mountaineering Associations (UIAA), which sets standards for products and requires manufacturers to pass specific safety tests for their equipment.[13] Specific marketing strategies are adopted by climbers who have become owners of companies that produce climbing equipment. This reveals a characteristic feature of climbing discourse in that the presentation of equipment often refers to an idea of climbing, the atmosphere of the expedition,

[12] Bill Forrest, for example, created a range of innovations in climbing equipment, including thigh belts for climbing harnesses, ice climbing tools with exchangeable blades, copperheads, daisy chains, sturdy haul bag sacks, absorbers (shock-absorbing quick draws), and snow boots. These innovations were a consequence of regular climbing activities, as well as observations, corrections, improvements, and new patents. The same also applies to such great innovators as Yvon Chouinard and the Lowe brothers.

[13] The first UIAA standards for mountaineering equipment appeared in 1964.

and authentic mountain activities, not such typical elements of the advertising message as the appearance of the object, its price, and an advertising slogan. For example, advertisements of products from The North Face or Choudinard Equipment at times do not even include the objects that are advertised. They may instead present a picture of a strikingly beautiful mountain associated with an actual climbing achievement that serves to give authenticity to the products offered (Drożdż 2010:37).[14]

The creation and introduction of new equipment by climbing pioneers and innovators has thus been encapsulated within numerous additional activities that make it possible for new gear to enter the market, become used by climbers, and gain the acceptance of the climbing community. There is no divergence between the needs of active climbers and the conceptual limitations of manufacturers when climbers themselves can introduce innovations into their activities and thereby create new tools or technical solutions.

Innovations, beyond their purely material aspect, are immersed in a discursive space that justifies their appearance and use. Richard G. Mitchell (1983:29) discussing "resistance to change" in climbing community claims that: "The reception given by the climbing community to improvements in these basic tools is more important than the improvements themselves." An important element in introducing any innovation is to ensure that it does not violate the primary activity, but rather elevates the style of action, rendering it more "clean."[15] In short, introducing innovations in climbing technology is a collective process insofar as their acceptance or rejection is ultimately determined by the entire climbing collective.

Setting New Standards for Climbing Performance

The biography of an individual may become intertwined with the history of a given social world as a whole in certain conditions and within a specific context such that it affects the further development of collective action. This may be restated as

[14] An early advertisement of Chouinard Equipment from 1968 consists of a photograph of the southeast wall of the Lotus Flower Tower in the Mackenzie Mountains accompanied by a quote from Emilio Comici: "I wish someday to make a route, and from the summit let fall a drop of water, and this is where my route will have gone." An additional element that strengthened their advertising message was the fact that the "co-founder of Chouinard Equipment, Tom Frost, was a co-author of…the first ascent on the wall portrayed in the advertisement, which took place 10 months before the latter was broadcast (August 1967)" (Drożdż 2010:37). Piotr Drożdż (2010:37) writes that the unique philosophy shaping the image of Chouinard Equipment consists of appealing to the impressive visual elements of the mountain world to indicate the authenticity of their own involvement in mountain activities.

[15] "Clean" climbing is understood as the highest determinant of climbing style and ethics. Greater value and better style are attributed to more demanding ascents and to those completed with the minimum amount of resources and technological facilities (see also: Mitchell Jr. 1983:31-32). Style is also regarded as the class of the ascent. It encompasses the boldness and difficulty of the plan; the personal courage needed to overcome the technical challenges and risks; the efficiency of the team (or single climber); one's resistance to the hardships of the mountain environment; a minimal use of specialized equipment and tools; and a team consisting of the minimum number of people, ideally a single climber (Sonelski and Sas-Nowosielski 2002:35-36). Clean climbing in alpine style thus means being self-sufficient, with no outside support during the ascent and descent. Today, clean climbing also involves having no environmental impact and not damaging rocks and mountains. While the definition of style has changed over time depending on the prevailing ideology and the technology available to climbers in a given historical period, how the ascent was completed has always been important, with the ideal being that it was performed in a "clean style."

an instance of a single participant influencing and changing the social world to the degree that she or he becomes the precursor of a new way of acting. Studying the biographies of exceptional participants, leaders, visionaries, innovators, and inventors may thus shed light on how moments of fundamental change in social action are rooted in the actions of unique participants.

One such figure in the world of climbing is the American John Gill (born 1937). His biography is a prototypical example of the strong link between, on the one hand, a participant's career development and personal biography and, on the other hand, establishing a new direction of development for an entire social world. We must also view him as a person standing at the intersection of the two worlds of climbing and gymnastics if we wish to understand the phenomenon he represents. Gill himself actively participated in both of these worlds and became a link between them. It was through his personal biography and actions that this connection was established and these two worlds met and interpenetrated.

In the 1950s, John Gill formulated the conceptual and practical foundations of the discipline of bouldering, defined as "short climbing with great difficulty being carried out close to the ground without using a rope" (Sonelski 1986:44). Most of his innovations comprised the introduction of performative elements characteristic of sports gymnastics into climbing. Gill maintained that a climber should use elements of both gymnastics and acrobatics when solving a boulder problem. He was also the first climber to use chalk (magnesium carbonate), which had long been a standard element of gymnastics that heightened both safety and efficiency, but had never been previously employed in climbing. A chalk bag is now regarded as standard equipment in both climbing and bouldering, although the roots of this practice in sports gymnastics and weightlifting have been forgotten. Another element Gill adopted from the world of gymnastics was intensive training, which he regarded as indispensable for both bouldering and climbing. Gill also created the first independent rating system for bouldering, the B system, so that the achievements of those who practice bouldering could be objectively evaluated.[16]

However, Gill's most significant change involved his introduction of so-called "dynamic techniques" (Godfrey and Chelton 1977:161-163), which has had a major impact upon modern thinking about climbing. The use of dynamic movements that were derived from gymnastics constituted a great breakthrough in climbing insofar as all previous alpinist

[16] The historical B system consists of three categories. B1, or the lowest level of difficulty, is defined as the highest level of difficulty currently encountered in traditional roped climbing. The next level is B2, which designates the "bouldering level" of difficulty. The B3 level designates a route that has been ascended only once, although others have tried to do so. When a B3 route is ascended a second time, it is reclassified as B2, or possibly B1 (Gill 1969; see also Gill *A Golden Age of American Bouldering*). The disadvantage of this system is that a number of routes of differing technical difficulty may receive the same classification, which entails the need for regular updating, particularly as B3 routes are successfully ascended and levels of technical difficulty are raised. This makes it impossible to indicate record (competitive) achievements during a given period of time, although it is useful for evaluating the achievements of climbers from different generations (Drożdż 2010:30). Gill himself has climbed bouldering routes of extreme difficulty in the United States that have not yet been climbed again and thus still have a B3 classification. Although B1, B2, and B3 indicate different levels of technical difficulty over time, the scale nevertheless reflects the number of climbers who have made a given ascent at a particular time. While Gill's B system is rarely used today, the idea behind it is that bouldering must be evaluated according to different criteria than regular climbing.

textbooks had repeated the rule that three points of contact are absolutely necessary during climbing at all times (Dobrowolski, Warteresiewicz 1971:88). This strictly forbade any types of jumps or throwing to holds.

> [J]umping for an out-of-reach hold was regarded as irresponsible, as well as ugly. By the middle twentieth century, textbooks and training courses beat a catechism into new climbers: do not "jump," "leap," or "throw" for holds; maintain three points of contact at all times. But, the contrast of "dynamic" and "static" had entered climbing terminology in a different context, as a description for ropework: the same beginners who were taught never to "throw" for holds also learned a "dynamic belay" that did not generate the dangerous forces of a "static belay." [Klein 2010][17]

Although jumping to out-of-reach holds was clearly regarded as irresponsible and inappropriate in the mid-1950s, Gill argued that "a bouldering problem should have some kind of dynamic component."[18] Furthermore, he emphasized in his "The Art of Bouldering" (1969) that what counts is not only the ascent itself, but also how it was done. He drew attention to the puzzle inherent in each bouldering problem that the climber had to cope with as an intellectual challenge (Godfrey and Chelton 1977:161-163), and further argued that a bouldering problem may be regarded as fully resolved only when completed with a graceful and elegant style (Gill 1969:355). Gill maintained that the essence of bouldering is determined by the three elements of difficulty, style, and technique, with style in particular, understood as the aesthetics of movement, comprising the basic principle (Sonelski 1986:43).

Gill's approach gave bouldering an element of performance in that it became a type of artistic action that cannot be reduced to mechanical or kinetic movement on rock. It is instead closely related to a climber's spirit and personal development, and reflects a certain philosophy of climbing, as well as ideas concerning the essence of action. Gill, known as "Boulder Dad," created the foundation of modern bouldering as a type of activity that combines the features of professional sport gymnastics and art, thereby giving it a completely new dimension. He created not only a separate climbing discipline, but also introduced irreversible changes into climbing practices in general, such as the use of chalk, dynamic movement, a demand for aesthetics, and regular training, as well as an emphasis on grading systems. By providing climbers with a new vocabulary that identified specific elements and features of bouldering, Gill implemented a completely new understanding of climbing activity and legitimized forms of movement that were previously forbidden. This process cannot be grasped and understood without reference to the biography of the unique participant who drove it, which Gill clearly was.

[17] Gill's determination to follow his own path and create an independent approach to climbing in opposition to the accepted rules is all the more surprising in light of the fact that the meanings and evaluations ascribed to specific movements generated respect for the climber who followed the rules and disapproval for those who broke them. Klein (2010) observes that "Simply saying 'dynamic movement' rather than 'jumping' or 'throwing' for holds, helped to make dynamics sound respectable, especially as 'dynamic' was a keyword for a mid-century America in love with engineering. The simple act of swinging or springing for distant holds was a bold, and in some corners, disreputable innovation, but Gill made dynamics part of an entirely new vocabulary of moves."

[18] See: *John Gill Interview*.

It is obviously never the case that a single individual creates a new social world or sub-world from scratch, for the actions involved are always embedded within a social context and certain necessary conditions must be met. This was clearly the case with Gill. First of all, he had to have access to two different worlds of activity in which he participated with equal devotion and from which he drew heavily, combining them, in effect, through his own actions. The patterns of the respective primary activities had already existed for many years.[19] And Gill was certainly not the first boulder in the world—his illustrious predecessors included Oscar Eckenstein (1859-1921) and Pierre Allain (1904-2000), not to mention many other outstanding climbers. But, he was probably the first climber to have made bouldering a primary activity—something that can be developed as an essential practice, with the status of a recognized and fully legitimate discipline in which one could specialize. That is why Gill is called "the father of modern bouldering" and recognized as someone whose innovations "mark the beginning of modern climbing in America" (Beckwith 2005:8).

Nor was Gill alone. His career was initially guided in 1956 by his friend Yvon Chouinard (born 1938), who introduced him to the term "bouldering," which he referred to as "instant suffering," and taught him how to climb boulders. Gill later found a group of faithful disciples in the 1960s—Rich Borgman, Greg Lowe, Jim Holloway, and Pat Ament—with whom he climbed (Ament 1977). His activities were thus accepted, socially reinforced, and supported by a group of enthusiasts, who then propagated their new way of climbing.

The story of a social world is clearly a story about its participants, and the history of the world as a dynamic whole consists of the story of individual actors. At times their personal careers illustrate the central axis of development of a given social world or sub-world, and then the study of their biographies becomes an element of the reconstruction of certain collective processes. However, this does not mean that only outstanding individuals who model well-established ways of acting and introduce innovative changes into the ways in which things are done are of interest for this type of research. For instance, participants can have different types of status in a given world and display different levels of involvement. Equally important in these processes are so-called "average" participants who, through their daily efforts, maintain the existing forms of the primary activity. It is precisely their accumulated actions that support the continuation of the social world.

Discussion

Both the adoption of crampons in mountaineering and the introduction of a new philosophy of performance in bouldering comprise examples that

[19] Documented practices of climbing boulders and rocks, which were undertaken by British, German, French, Italian, Australian, and American climbers, date to 1874. This early climbing of boulders, often with the help of a rope hanging from above, was treated as something to do on a rainy day or as training before "real climbing," which meant conquering mountains. Gill remarks that the French Bleusard group has preserved the remarkable consistency of this action insofar as generation after generation of Parisian climbers making the short journey to Fontainebleau to practice for the Alps "continued in a more or less uninterrupted fashion until present times. This temporal continuity appears to be unmatched anywhere else, although the most important advances in difficulty at Fontainebleau occurred after 1970" (Gill *Origins of Bouldering*).

support a broader discussion concerning the relationship between individuals and the collective in which they participate. This discussion may also provide further insights into the ontological features of the social world as such.

The Polish sociologist Stefan Czarnowski draws attention to the fact that a new tool or apparatus—even if it obviously saves effort, multiplies possibilities for exchange, or leads to increased profits—is not always accepted by a given community. Although the principle of greatest efficiency would appear to be decisive, the adoption of new tools may ultimately be opposed in social reality, with inventions of great practical importance that save working time or improve effectiveness very often being met with resistance or even rejected (Czarnowski 1956:122).[20] Czarnowski (1956:129) observes that this may be the case simply "because they are new and, as a novelty, arouse suspicion." Moreover, a reluctance to innovate may stem less from the conservatism of the users of old technology than from the mere fact that

> the long-term execution of certain movements at work produces automatisms, and the greater such automatism, the more nervous and mental effort is needed to begin other movements, even if they are simpler and easier—more rational. The worker must simultaneously unlearn and learn again, so that the effort he undertakes is really much greater than when using the old tool. [Czarnowski 1956:129]

The rejection of Eckenstein's 10-point and Grivel's 12-point crampons by contemporary mountaineers might well have reflected not merely some blind rejection of the innovation itself, but rather the problem of overcoming the automatisms of other members of the social world of climbing. Another relevant reason might very well have been the desire to maintain a specific image of an "authentic mountaineer," who would only act in a certain way and use specific tools in order to be regarded as a true member of the climbing community.

In respect to the relation between individual and collective processes, we may say that an inventor is someone who changes the culture in which he lives by following an "inner urge of some sort which leads him to try to produce new things without reference to their social implications" (Linton 1936:310). Linton (1936:309) states that an inventor does not seek prestige or reward, but rather recognizes acute needs that the current culture is unable to satisfy. He further argues that

> the successful invention is simply the one which is accepted by society and incorporated into culture. This matter of acceptance seems to be controlled much more by the factor of the society's directed in-

[20] The full acceptance of an innovation comprises a new tool being adopted along with the way in which it is properly used (Czarnowski 1956:123). But, even very effective tools may not be adopted for a number of reasons. First, the use of new tool may interfere with the organization and internal division of labor of the given social group. Second, it may cause changes in working time, such as by altering its circadian rhythm or preventing the effective performance of other tasks. Third, its use may make it necessary to abandon persistent automatisms that have been developed over a long period of time (Czarnowski 1956:129). Fourth, a new tool threatens the status of important members of a given group when it breaks down existing work arrangements, which then threatens the existence of that group in its current form. Czarnowski (1956:130) also notes that various moral, aesthetic, and religious reasons may generate strong resistance to the adoption of a new tool. Linton (1936:342) discusses how a new cultural element may be incompatible with existing ones, noting that the acceptance of novelty "entails certain changes in the total culture configuration."

> terests than by any factors of practical utility. [Linton 1936:320-321]

In this sense, the needs of Eckenstein and other innovators somehow aligned with the development of the accepted aims of the climbing collectivity such that the vision of ideal activity developed in accordance with the evolution of the goals that particular climbers set for themselves. The object of conquest at the end of the eighteenth century was simply a mountain, and successfully attaining the goal meant to stand on its summit, regardless of the means used. This spontaneous way of acting in the mountains was characteristic of the early period of alpinism, when the ultimate problem was to discover a path to the top. It became evident over time, however, that there could be more than one way in which to reach the summit, which led to the emergence of the concept of climbing route. More thought-out forms of activity eventually began to crystallize, although the sense of accomplishment in mountaineering continued to be associated with using "every possible route leading to the top" (Korczak 2009).

While the level of difficulty overcome by climbers gradually increased, the idea of "struggling with difficulties" was regarded as the essence of climbing, and this view remains valid today. As Albert F. Mummery (1895:325-326) emphasized,

> if we consider for a moment the essence of the sport of mountaineering, it is obvious that it consists, and consists exclusively, in pitting the climber's skill against the difficulties opposed by the mountain…But, if it be admitted that the skill of the climber has not increased relatively to the difficulties grappled with, it would appear to necessarily follow that climbing is neither more nor less dangerous than formerly. It is true that extraordinary progress has been made in the art of rock climbing, and that, consequently, any given rock climb is much easier now than thirty years since, but the essence of the sport lies, not in ascending a peak, but in struggling with and overcoming difficulties.

The image of the object of conquest has changed over time, and mountaineers have developed more sophisticated means to overcome difficulties. But, we need to keep in mind that it is individuals who have resolved climbing problems, completed routes, and reached the summits—and their very actions have changed the limits of the possible.

As climbing evolved, the level of difficulties reached the point at which mountaineers could no longer succeed because the physical and psychological barriers meant that every fall was tantamount to death—techniques could not be perfected with only one possible attempt to do so. The psychological barriers were overcome through the use of pitons and the adoption of the first safety systems, and then, at the beginning of the twentieth century, monumental rock walls came to be regarded as the primary climbing problem to resolve. Although free climbing had already crystallized in the United Kingdom and Saxon Switzerland, routes for the use of pitons were becoming increasingly used in the Alps. During the 1930s, the idea of a climbing route first became reduced to a "logical solution of a wall formation, such as a pillar or a line of cracks," before coming to be understood as the "free part of the

wall" (Korczak 2009). Any fragment of a rock wall could then become a place for establishing a new climbing route by marking the line whose aesthetics depended on the current technical possibilities and the skills of climbers.

Linton provides numerous examples in support of his claim concerning mountaineers that the appraisal of the wider collective is not a likely motivation for the actions of an innovator.[21] This also applies to the creators of crampons, ice axes, carabiners, and pitons, most of whom wanted to strengthen their own activities and created new tools so that they could attain their very personal climbing goals. There are many examples of climbers who made innovative equipment especially for a particular route, such as pitons of special shapes for safety on a specific rock formation—it was clearly the climbing ambitions of inventors that contributed to the intensive development of climbing equipment. The biographies of climbers reveal their need to set new and more difficult challenges for themselves, looking for a niche in which they would be unsurpassed.

However, it was also the atmosphere of the climbing community, not least the vision of the primary activity that was "upheld by actors' tacit monitoring of social coalitions" (Collins 1981:984), that fostered climbers' ambitions and drove them to reach for ever more difficult goals in the name of "authentic mountaineering." But, the fact that all the great innovators were world-class climbers, who made spectacular ascents with new equipment they created for themselves and for their own particular climbing projects, does not exclude the possibility that they operated as agents of the social world and spoke on its behalf since they had internalized its principles to the degree that they were capable of exceeding them.

In addition, the idea of climbing style as a relative value emerged from the vision of an ideal activity in order to indicate how unique participants could combine their own philosophy of climbing with the novel way in which they performed their actions. If a particular participant also influenced others and thus had a substantial social impact, then a new space for communication was opened up and conditions were created for establishing a new sub-world of climbing. A new collectivity of people acting in a given way thus appeared.

The results of innovation could then influence the entire collective, and the inventions of particular climbers would rapidly spread—changing the face of the climbing world and influencing its way of action. The motivations of individual climbers were thus translated into the development of the world of climbing as a whole since they led to new ways of acting and created the means necessary for carrying out tasks that had previously been impossible to imagine. When a new invention proved to be useful and effective, it was willingly imitated by others and widely copied.[22]

[21] Linton (1936:315-316) states that "It seems safe to assume that in making the invention his [the inventor—A. K.] intentions were purely individualistic and primarily economic. One is permitted to doubt whether it ever occurred to him that he was meeting an unsolved problem of the society in which he found himself."

[22] Everett M. Rogers describes the process in which the use of a new tool or the adoption of a new mode of action begins with a few innovators, then gains the recognition of "early adopters,"

The question of new ideas and inventions can easily be conflated with the phenomenon of diffusion, which is based upon contact between two or more worlds (cultures). Linton (1936:324) discusses the "ability of all societies to borrow elements from other cultures and to incorporate them into their own," further stating that "there can be no doubt that diffusion has occurred wherever two societies and cultures have been brought into contact" (Linton 1936:327). We nevertheless must ask how such "contact" occurs. What does it mean to borrow an element from another culture, and how does it happen?

While processes of diffusion and adaptation primarily concern the collective level of social life, processes of innovation and development link together the activities of a particular individual with the collectivity in which she or he participates. My primary intention in the present discussion has not been to historically reconstruct in a detailed and comprehensive manner how innovations emerged in climbing, but rather to cast light not only upon the relationship between the individual and the collectivity at the moment when the definition of action changes, but also upon the role that innovation plays in this process.

Linton (1936:345) discussed the diffusion process as requiring both a donor and a receiver of a given innovation. In contrast to this view, the innovations in climbing that I investigated above did not emerge from a donor and a recipient who met and exchanged ideas—they were instead created by unique individuals who drew upon the different cultures or social worlds in which they participated. Since such individuals were simultaneously members of two (or more) worlds, they re-worked the differences between those worlds through their own actions and created some new quality, thereby participating in the continual permutation of action (Strauss 1993). Modern social life may be described as a mosaic of various social worlds and sub-worlds and, as a result, individuals who reside there can gain an insider's access to the different types of knowledge associated with a variety of domains of activity. They may be able to generate a new quality by combining that knowledge, as did John Gill and Oscar Eckenstein, and then implementing that new quality through their own way of acting, thereby marking off the boundaries of a new world or sub-world.

The examples I have presented from the world of climbing illustrate that contact between different cultures takes place not on the macro-level of collectivities, but rather through the lived experience of particular individuals who inhabit different worlds. In Ralph Linton's (1936:336) words,

> It goes without saying that contacts between cultures can only be established through the medium of individuals.

These individuals serve as ambassadors of the worlds in which they participate, combining crucial

is later accepted by the broad masses of a given society, and finally reaches even "laggards" who are reluctant to accept anything novel. He views an individual who is "less innovative than the average member of a social system" as being in the "late majority," although he may be a member of some other adopter category as well. He identifies five such adopter categories: 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards. Rogers (1983:22) regards *innovativeness* as "the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system."

elements of the activities that occur in those worlds with their own actions. It becomes clear from this perspective that the ability to incorporate elements from one culture into another is an attribute of particular individuals and characterizes their actions, not cultures or social worlds in general. This arises from their unique location and from their commitment to the primary activities of different worlds.

An innovation is then the creation of a person who combines elements of different cultures into a new style of performance. It is either promoted or rejected depending on whether the vision of the activity with which it is associated is accepted by the majority of participants in the social world in question. That is to say that the dynamics and transformations of a given social world reside upon the activities of exceptional individuals—pioneers, innovators, and visionaries—who attained mastery of the primary activity and set new standards of performance for others. However, a new mode of acting must be accepted as valuable and morally justified by other participants in that social world before it can be collectively adopted.

Conclusion

The tension between an individual and the collectivity, including the process of translating individual activities into a supra-individual collective phenomenon, is of great theoretical interest. The analytical framework presented in this article in order to describe the world of climbing comprises an effort to transcend this particular social world such that the insights provided by the present discussion can be applied to other substantive areas as well (Glaser and Strauss 1967:242; Konecki 2000:28; Kacperczyk 2016:689).

First of all, this analysis indicates that the *primary activity* is to a great extent both shaped and sustained by accompanying *auxiliary activities*, such as the creation and implementation of new technology, that not only change the way of acting, but may also render possible the maintenance and reproduction continuance of a given social world.

Second, the analysis suggests that the dynamics and transformations of a given social world are anchored in the activities of exceptional individuals. They reside upon the activities of pioneers, innovators, and visionaries who achieve mastery in performing the primary activity, provide others with new standards of performance, and often significantly modify the development of technology. The biographies of famous innovators have been closely intertwined with development of the social world of climbing as a whole.

Third, the generation of new ways of acting is connected with the encounter and intersection of several social worlds. A necessary component of such "encounters" resides upon the fact that an innovator who provides the impulse for a new course of action has been a participant in several worlds. The creation of innovative ways of acting is associated with an intersection of social worlds that is completed by and through the activities of a unique participant.

Fourth, a new definition and mode of acting must be accepted as valuable and morally justifiable by the mass of other participants if it is to be adopted.

Fifth, "average" individuals attached to traditional ways of acting, who in their mass uphold the vision and cultural reproduction of the primary activity,

ensure the persistence and continuation of a given social world (Kacperczyk 2016:689).

Finding answers to such questions as How are changes made? How are innovations introduced into the primary activity? and How does a change take place at the level of the collectivity? requires that we combine analyses conducted at both the micro- and macro-levels in order to reveal the range and scope of the changes that the world has undergone (Collins 1981:987; Fine 1991:161). Gary Alan Fine (1991:162) maintains in this regard that

> we seek to recognize that macro and micro approaches are and must be informed by each other in developing seamless knowledge of the world.

Micro-to-macro translation is possible—an individual participant who exerts an influence upon others may also have an impact upon the entire collective by causing others to begin acting in a new way. The converse is also possible, however, in the sense that the aims and goals of a unique member of a given collectivity remain structured by the internalized norms and values of the world on behalf of which she or he acts.

Investigating examples of innovation in the social world of climbing can assist us in acquiring further insight into the ontological relation between an individual and a collectivity. Friedrich Ratzel (1921:412-413) asserts that the basic assumption of anthropogeography is that the ethnographic object accompanies its owner, and that the proliferation of ethnographic objects only takes place through man, above all within him as the germ of an idea in his mind. He further argues that any innovation in the form of an invention is always associated with a particular human being. Linton (1936:306-307) also maintains that an individual is the creator of any innovation, stating clearly that

> Every new application of knowledge calls for an exercise of those rational functions which…are the exclusive possession of individuals. Societies, as such, are incapable of thought and therefore of invention. At most the conditions of social life may make it possible for a certain limited group of individuals to work on a problem together, stimulating each other's minds by an exchange of ideas and contributing various elements to the final invention. It is never the entire society which joins in such activities, and a thorough analysis of the results can usually break them down into ascribable individual contributions. In short, there can be no inventions without inventors…Granted that individuals are the only agents in invention, it becomes important to ascertain what stimulates them to invent.

The ultimate unit of social action and the actual agent of change is thus the individual who acts in the world. Randall Collins (1981:987) shares this view in claiming that all we can ever attend to, as either social researchers or living human beings, are micro situations and micro events.

> [I]t is impossible for anyone ever to be in any empirical situation other than this sort. All macro-evidence, then, is aggregated from such micro-experiences… Strictly speaking, there is no such thing as a "state," an "economy," a "culture," a "social class." There are only collections of individual people acting in particular kinds of micro situations—collections which are

> characterized thus by a kind of shorthand. [Collins 1981:987-988]

The "social world" is not an entity in the ontological sense of having an independent existence, for it is rather a conceptual "superstructure" erected by researchers and participants alike in order to obtain a better understanding of social reality. The "impact" of the social world observed by the researcher does not result from a type of action characteristic of the subject. It rather follows from an accumulation of the consistent, similar, and focused actions of individual participants who co-create the constructs of their worlds and communicate them to each other intersubjectively, thereby sharing, maintaining, and acting in accordance with them. This recalls William I. Thomas' (1928:572) view that if participants in a given social world view it as "real," it will be real for them in its consequences. In Collins' (1981:989) words,

> Individuals within micro situations make macro references to other situations, as well as to abstract or reified social entities; the effects of micro situations upon individuals are often cumulative, resulting from repetition of micro-experiences; outside analysts cannot establish micro principles without comparing across micro situations.

The "social world" therefore remains within the realm of the imagination, constituting a social construction of particular cognitive subjects who exist in a tangible way. The social world is an illusion in the sense of being a concept that we apply to reality in order to organize our observations. Regardless of whether we understand the world in Alfred Schütz's (1962) terms as consisting of the experiences of a single participant, or as a world that is reconstructed by a social researcher, as Anselm Strauss (1978; 1993) or Howard Becker (1974; 1986) would maintain, there are only facts consisting of the actions of individuals, their combined joint actions, and their collective actions. The social world as a "collectivity" or "ontological entity" does not exist in the sense of being an agent and active subject. It is rather a way of capturing reality that is created by an observer—a perceptual matrix of a cognitive subject who organizes vast amounts of data in the effort to gain a better understanding of them.

The link that connects these two concepts—the world experienced by the participant and the world described by the social analyst—is the person of the researcher, who explores the limits of his/her own world as he/she seeks to capture other people's worlds. However, the researcher always does so in a way that is colored by his or her own point of view, relying on his or her own constructs of the world of others. The story of the social world is consequently the story provided by the researcher.

> Researchers themselves never leave their own micro situations; what they do is compile summaries by a series of coding and translating procedures until a text is produced which is taken as representing a macro reality, standing above all the micro situations that produced it (Garfinkel 1967; Cicourel 1975). This is true whether the researcher is relying on conversations with informants or on closed-item questionnaires, or even on direct personal observation. In each case there are a series of tacit summaries between the actual life experiences and the way in which they are finally reported. [Collins 1981:988]

What we actually do when we investigate social worlds is to study the participants, their actions, and the effects they produce. We thereby gain access to the macro phenomena that shape how these participants share their perspectives insofar as their actions are structured in accordance with discourses that differentiate ways of performing, as well as images about how to act properly. The reality of discourses is anchored in acts of communication and the resulting messages, which we can gather and analyze. All of these elements—individuals, their actions, their stories, their behavior, and their interactions—are available to us sensually and can be reflected in the research process. However, no observer has access to a "social world" as such.

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