

Sport in the Service of Restoration: Sport as Physical Therapy During the First World War

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Scholars writing on the idea of “sport in the service of war” suggest various links, some describing sport as a form of training for war, others as a less violent substitute for real wars. This paper considers sport as a means of recovery from war, specifically, from war-related injuries. Most popular and the few scholarly histories that look at the use of sport as therapy, trace developments back to the Second World War period, focusing primarily on work done at Stoke Mandeville in England, where sport was used as a form of physical therapy for veterans with spinal cord injuries.¹ However, a number of First World War period physicians from diverse countries such as Germany, England and the United States, extended their wider use of exercise and work as physical therapies into prescribing sporting activities for injured and disabled soldiers. This paper analyses medical discourse on exercise therapies, and more specifically, sport as physical therapy during the First World War in an international context, drawing primarily on articles in medical journals.² It also (briefly) considers the sporting practices of disabled veterans at the Roehampton Hospital in London, England. In using sport as therapy for disabled veterans,³ the work of First World War physicians forms an important link in the histories of disability sport and physical therapies and in the social and ideological construction of people with disabilities, in general. For disabled veterans themselves, on the other hand, sport represented much more than therapy, enabling them to get back to a fuller life and establish social contacts.

Prior to the war, the medical field did not really concern itself with adults with physical disabilities. Children with disabilities were the focus, for two reasons: 1) they were easier to access, often living in charitable institutions that were aimed at “total care,” with mental and moral treatment as important, if not moreso, than medical care.⁴ Secondly, a surprisingly prevalent belief held that adults with disabilities probably weren’t worth the time. Many assumed that adults who had long-term disabilities had already lived a life of dependence, and had most likely slipped into mental turpitude and moral depravity.

In regards to character, many Victorian physicians drew correlates between disability and “irregular living” and the “intemperate use of spirits.”⁵ Physicians implicitly assumed a lack of morality among people with disabilities. For instance, one military physician during the Spanish-American War (pre-empting claims made more frequently during World War One), insinuated that disabled men deceitfully joined the army so they could claim pensions.⁶

In associating mental defectiveness and ill character with physical disability, doctors gave voice to more widely-held conceptions of people with disabilities. Victorian novels and early twentieth century films, for example, portrayed people with disabilities as dependent, idle, simple, amoral, conniving or evil, in part at least as a result of their disabilities.⁷ Robert Murphy

calls this idea “a contamination of identity,” where the person’s disabling conditions are understood as embedded in the entire fabric of their physical and moral personhood.⁸ Erving Goffman also included physical disability as one of his categories of individuals seen as deviant, in his classic study *Stigma*. He explained how the “stigma” of physical disability requires a person to manage a societally perceived “spoiled identity.”⁹ As described aptly by these two authors, society in general saw the physical limitations that people possessed as permeating their whole social being. More importantly, when physicians expressed these opinions, they took on an air of scientific fact, which then bolstered the wider societal discourses. In the end, it meant that physicians focused little on adults with disabilities, giving them over as an already ‘lost cause.’

In regard to the treatment of children with physical disabilities, physical therapies figured into the general medical discourse for a long time, with a strong presence dating back into the 1890s. Within the medical field, certain physicians such as R. Tait McKenzie, William Benham Snow and R. Fortescue Fox strongly promoted the use of different physical therapies, and frequently contributed to the medical discourse through journal articles and books.¹⁰

Children with disabilities, frequently living in institutional care, received a battery of treatments, both physical and educational. The program of care usually involved some form of surgery or forcible correction, bracing, and a variety of physical therapies, including massage, manipulation, and exercise. Often, educational or vocational training in trades such as crafts-making followed.¹¹

The discursive influence of therapeutic modalities for treating of poliomyelitis and other disabilities of childhood easily can be seen in the physical reconstruction of soldiers, especially with cases involving muscle and nerve damage or requiring re-education in movement. Physicians turned to the full battery of physical therapies underpinning their previous treatment of childhood disability when dealing with disabled veterans. Many of the leading proponents of the use of physical therapies achieved positions of influence during the war, so war-time physical therapy should be viewed in part as the continuation of an already prevalent discourse.¹² General surgeons, orthopedists, and neurologists brought the clinical and surgical experience gained with children to what became known as the “problem of the disabled soldier”, a problem certainly not insignificant.

The First World War generated disabled bodies at unprecedented rates. By April, 1915, only four months into its war, 3000 disabled soldiers had returned to Great Britain. At final count, Britain had some 752,000 newly disabled people; Germany suffered 4 million wounded, 1,537,000 with permanent disabilities, and France had over 1 million newly disabled. Canada, fielding a relatively small force in comparison to other belligerents, had some 70,000 disabled veterans, while the United States, even with entering the war late in 1917, accounted for approximately 200,000.¹³ One scholar estimated the worldwide total of soldiers with new disabilities as a result of the war at 27 million.¹⁴

The programs established by various nations to deal with these massive numbers of disabled veterans attempted to not only provide medical treatment, but also enable the veterans to return to as full a life as possible, through physical retraining and vocational education.¹⁵ While doctors wanted ultimately to “re-establish” the disabled veteran in society, everything started with the provision of actual medical care. Patients usually underwent medical and surgical treatment, followed by “functional re-education,” defined as the provision of artificial limbs (if

needed) and retraining men on how to function physically with their newly disabled bodies.¹⁶ They might later pass on to re-training for a new trade, or “vocational rehabilitation,” but physical reconstruction came first.

For World War One physicians, the key to recovering from disability lay in active movement of the body. While in earlier decades physicians proposed that massage and passive motion provided many of the same benefits as exercise,¹⁷ physicians in the war years stressed active movement over other forms.¹⁸ Medical discourse placed such a premium on active movement that some doctors experimented with very early post-operative physical activity – as soon as the swelling began to recede, and in one case, as soon as the anesthetic wore off.¹⁹

Sport for disabled veterans must be set in the context of exercise and physical activity programs that physicians heavily prescribed. Obviously, sending patients to the gymnasium was one of the easiest ways to get them active. In a gymnasium, groups of men could undertake exercise classes together under words of military command. PT instructors and medical gymnasts specially trained, in most cases, to a standard set by Army medical departments,²⁰ conducted classes and looked to the care of individual students in the gymnasium. In group exercises, men with similar cases executed forms of gymnastics and drill by “squads,” performing sequential movements on the commands of an instructor.²¹

While group work enabled mass numbers to exercise at once, physicians expressed concern for the men’s individual needs. As one physician described the gym work, “the schedule as planned by the trained gymnast consisted of ten minutes of setting up exercises followed by twenty minutes of special work in which individual attention was given by the surgeon in seeing that the disabled part was properly exercised.”²²

Graduated individual exercises fed into more robust (and often more entertaining) activities:

Practice in a walking frame... stepping over hurdles, or footprint and mirror walking, which belong to the leg section, lead naturally to dancing steps with a phonograph or, better, a piano-player in the gymnasium.²³

At Walter Reed Hospital in Washington, the main reconstruction hospital in the United States, doctors developed a system of progressive exercises for convalescent soldiers. Patients worked through a series of specific “bed exercises,” then progressed to “ambulant exercises,” and normal exercises including gymnasium and sporting activities.²⁴

Individual exercise by apparatus held an incredibly prominent place in the medical treatment of disabled veterans. Ernest Hemingway based the plot of one of his short stories on disabled veterans doing apparatus retraining.²⁵ It is almost impossible to pick up a scholarly book or article describing war-time physical reconstruction or rehabilitation that does not picture veterans in some sort of elaborate exercise machine.

In many cases, the machines targeted very specific body parts. In describing the work of Bott at the University of Toronto, Heap wrote that

He designed specific sets of exercises targeted at various kinds of disabilities, including limitations of joint movement and muscular

strength, paralysis resulting from damage to the nervous system, and physical and mental disturbances related to 'shock.'²⁶

As another example, the Heaton Park Command Depot in England where R. Tait McKenzie commanded during the war, possessed an "arm table", a device that had work stations for all parts of the arm, including the shoulders, elbows, wrists and fingers. The patient started on one end and rotated through the station, working more stringently on areas needing specific attention.²⁷

Physicians also prescribed competitive games and sports for their physical activity value. The evidence of this is not overly prevalent,²⁸ but it sets significant precedent for later developments in medical therapy and disability sport. Among the references collected so far, the use of sport as therapy appeared in Britain, Belgium, Italy, Germany, the United States and Canada.

A Dr. T.E. Sandall, former commanding officer of a convalescent camp stationed in France, described the use of sport as therapy there. The men in his camp were not disabled, but "walking wounded" who returned to the front after a few weeks' medical or convalescent treatment. I mention Sandall's article because it demonstrates that a discourse on sport as therapy circulated at the time. Convalescent care at the camp focused on sport and competitive games to train men back into fighting fitness.²⁹ Sandall noted that the Headquarters PT and Bayonet Fighting Staff had published released a pamphlet describing some 100 modified games for use in training and retraining soldiers. He described 13 of these games in an appendix to the article, including modified versions of tennis and team handball.³⁰ Presumably, other physicians in the Royal Army had access to this document. Coming as it did from Headquarters, the document likely had strong suggestive power in the use sport as therapy

Sporting activities apparently made up part of Germany's plans for reconstruction. An American physician who visited a number of hospitals in 1917 reported that a General Leu, who supervised reconstruction, believed firmly in the value of gymnastics and active movements. The men under his care engaged in "pedagogical gymnastics" and passive movements. The author described a track meet and other sporting competitions, designed to get the men moving at an early stage. He wrote,

Around the exercise field there was a kind of race track, as for walking matches, with hurdles, the hurdles being thresholds of various sizes and shapes, to train the men who had lost a leg, ladders with rungs at different heights, deep sand over part of the route, etc. Then the men passed to sports, football, casting the disk, etc., with jumping exercises for the amputated. It was certainly a strange sight to see the men with one leg going through these various exercises and games. But no one could help being impressed with the zeal, and apparent pleasure with which the men took part in them; most of them were managed in competitive form.³¹

Another writer who visited Germany to view their reconstruction methods also reported that exercise and sports held a major place in re-education, especially for amputees. Comparing "games and sport" with "medico-mechanical treatment," he concluded that sports had more therapeutic value, both psychologically and physically.³² He too, described sports competitions. He wrote that one hospital,

reports as part of its regular training for one-armed and one-legged men, ball playing, spear throwing, bowling, shooting and quoits. The sports at Ettingen include work on parallel bars for one-armed men, besides regular calisthenic exercise pursued in the open. At the one-armed school at Heidelberg, Dr. Risson reports club-swinging for one-legged men, a contest with the horse between the one-armed and one-legged, standing high jump for the one-legged, putting the shot for the one-armed, also ball throwing and hand ball for the latter, the stump being used as well as the good arm... In many places, hospital contests are organized, or permanent athletic clubs for cripples are created.³³

Judging by these last two commentators, sporting activities made up an important part of the German plan for reconstruction, at least in some places in the country.

Physicians incorporated sport frequently into the therapeutic regimen at Walter Reed Hospital. Two physicians described the sports played there.³⁴ Veterans with hemiplegia played indoor baseball. A Dr. McFee extolled the activity because during play the men forgot their disabilities and unknowingly worked on their coordination.³⁵ Henry Stewart described a variety of games undertaken at Camp Meade in Washington. One of these, called "towel tag," would probably be banned from current universities as a form of hazing. Nonetheless, he described that, when participating in the games, "the men had a sparkle."³⁶

As indicated above, different forms of physical activity and sport made up a core part of programs of physical reconstruction. The therapeutic benefits offered by active forms of exercise became one of the arguments in favour of work therapies. More important for many physicians than the mental or moral effects (which they did extol), they expected physical improvements from work therapies. Work had a tonic action on the body, provided a good means of active movement, and had direct and indirect mechanical therapy effects. By "direct" effects, physicians meant the effect of moving the body part, helping to break down adhesions and overcome stiffness and pain. By "indirect" effects, physicians meant that the men forgot "to nurse their disability" for a time and improved damaged body parts not directly involved in the task at hand.³⁷

A number of physicians argued that work essentially constituted a form of exercise, and that the men would pursue it longer than activity in the gymnasium.³⁸ Some thought it better exercise than exercise itself, and planned their workshops and therapeutic regimen accordingly. One pointed out that in his workshop, "All machines, as lathes and saws, were foot or hand power, that the exercise feature of the work might always be present."³⁹ Another argued that

The coordination of a partially paralyzed arm, for instance, improves more rapidly by driving a nail, catching a ball, whittling a stick, or threading a needle, than simply by having the lame joints flexed.⁴⁰

Of course, these work therapies also fed nicely into vocational training and rehabilitation programs, often the ultimate goal of reconstruction work.

For physicians, a number of factors motivated their work in physical reconstruction. The comments of Robert Wilson of the Canadian Army Medical Corps are indicative of the wider social concerns:

Humanitarian principles, military exigencies, and sociological and political economics have combined, as a result of this world war, as they otherwise never would, to make the question of the repair and rehabilitation of its human waste of paramount and immediate importance; lessening the number of cripples; increasing the number of effective fighting material; increasing the number of those available for industrial production; and so lessening the economic burden of the general population of the future by lessening the pensionable disability.⁴¹

As mirrored Wilson's statement, physicians expressed concern for the multiple goals of getting men back to the firing line, enabling disabled veterans to resume civilian work, and tending to the perceived economic and social ills of societies that faced the prospects of the return of thousands of people with newly acquired disabilities.

During the war, most physicians that initially dealt with newly disabled soldiers held positions in the military. As such, military goals took priority. Bill Rawling notes that the whole point for military medicine, for hundreds of years, was to get sick and wounded ready for the next battle, the need or will of the patient being quite secondary.⁴² Over time, physicians added secondary goals to the primary one of maintaining manpower. Economic considerations brought dual aims – preserving military manpower, but also improving those disabled by the war so that they might take up employment upon their return home, and thereby lessen the pension drain on the nation. As one physician described care for the disabled veteran,

He must be made fit for soldiering again at the earliest possible opportunity, or happily, as we look forward to victory, he must be rendered fit to reenter civil life fully able to carry on and do his bit without claiming any of the government aid that a grateful nation stands ready to grant her incapacitated soldiers.⁴³

As a whole, the medical field expressed paternalistic and social reformist ideas in their discussions of disabled veterans. Physicians expected disabled veterans to exhibit depression and apathy,⁴⁴ which, it might be noted, would be a natural response, not just to the traumatic disablement, but to the war itself. Some doctors feared that many men would feel that they had “done their part” and felt entitlement to a life of post-disability luxury.⁴⁵ The medical field generally argued that work therapies (occupational therapy and vocational retraining) constituted the best method of arousing men out of this depression and apathy. Physicians expected work to appeal to the masculine nature of disabled veterans, and to help prepare them for reintegration into working life. Meanwhile, much of the discourse served to remind disabled veterans that they did not meet the masculine ideal of productive wage earner and head of household. As Jeffrey Reznick noted, the idea of reclaiming disabled men for society, such as in McKenzie's title of *Reclaiming the Maimed*, designated that disabled veterans occupied a status that made them less than men, an emasculated and unemployed status from which others had to reclaim them.⁴⁶

Socio-economic concerns constituted one of the major motivations for governments and physicians in reconstruction and rehabilitation. As written by Seth Koven:

Restoring wounded soldiers to their masculine roles as heads of households, independent wage earners, and fathers was a major task of the postwar reconstructions of men's bodies, gender relations, the economy and the nation.⁴⁷

Many physicians took the amelioration of post-war society as the reason driving their work in physical reconstruction. Some wanted to prevent an “army of cripples” from being a drain on society,⁴⁸ others expressed concerns for making an “otherwise unproductive” class of society useful contributors to the economy,⁴⁹ while many felt restoring men to economic life to be the only way of offering them a complete and happy existence.⁵⁰

Some, expressing explicitly the belief in the “contamination of identity,” feared that disabled soldiers would give in to the natural disposition of the disabled and become dependent, intemperant and morally inept.⁵¹ As expressed at the time by Sir Robert Jones,

Let it be remembered that an idle grown-up cripple almost invariably becomes a degenerate. There must be no loafers, – no recipients of charity. The pensioner must always live the life which, while it gives him hope and solace, yet deepens the nations’ gratitude to him.⁵²

Programs for the reconstruction and rehabilitation of disabled veterans assumed that productive, independent veterans would be more likely to be self-fulfilled and socially active, but not disruptive, than those who could not “overcome their disability” and fit back into the work culture.⁵³

For physicians during the First World War, exercise therapies, especially sport, held tremendous practical and ideological powers. These therapies had proven therapeutic value, encouraging the development of new and compensatory strengths. They also provided a means to help disabled veterans recover as much of their full lives as possible. Similar to muscular Christian and public school ideals on exercise and sport, physicians also believed that they would stave off mental and moral decline among their charges, appealing to their manly natures and (re)inculcating right conduct.

The question remains to be asked what the men themselves made of all of this. Little documentary evidence remains that gives an indication of their thoughts and opinions on their treatment regimes, or lives in general. Primarily low-ranking (ex)military men who gave away power differential to nearly everyone who touched their lives at the time, they left little behind little written documentation produced by themselves. What we do have, at least in regards to their sport, consists of piles of photographs, second-hand reports published in after public events, and material from institutional magazines.

Such evidence does indicate a large amount of sport and exercise practices among the men, much of which appears to occur outside of the framework of medical or vocational therapy. Julie Anderson, for example, wrote 7 pages detailing some of the recreational and competitive events that occurred at St. Dunstan’s, an institution for blind service-men in Britain, and at the Star and Garter Home, where British veterans with various disabilities lived.⁵⁴ Here, I will very briefly look at the evidence of sport at the Roehampton Hospital in South London, in the years during and immediately following the war.

The Roehampton Hospital was established in 1915, as a hospital dedicated to treatment and re-education of veterans with amputations.⁵⁵ It provided medical treatment, limb-fitting, and vocational rehabilitation programs for the men who took residence until well enough to return to their homes.

The men there, mostly young and healthy before their disability, would presumably have a fair sporting pedigree. Sporting competitions occurred on both an ad-hoc and very organised basis at the hospital. There is little doubt that the men frequently undertook sport and recreational physical activities on their own. In 1915, *Country Life* magazine reported on the ‘glorious pluck and cheerfulness’ of the men at the hospital as they played football and tennis.⁵⁶ It is questionable whether or not the event was staged for the magazine, but one could reasonably assume that the men were not engaging in activities completely foreign to them in their ‘new’ lives.

Annual sports competition, open to the public, began in 1916.⁵⁷ This raised funds for the hospitals in gate receipts and garnered publicity in newspaper reports. For the men, these would have provided an opportunity for socialisation, not the least of which among the ‘fairer sex’, and a goal on which to focus training efforts. Events held generally included athletics competitions and other entertainments. Of the 1917 event, *The Sporting Life* commented:

for about six hours waxed fun and furious...there were flat races for the leg cases...chariot races for the double amputation cases...It was good to see how eagerly and light-heartedly the men entered into the sport...a bountiful tea was provided, following which there was ‘all the fun of the fair’, good old English methods of making merry brought into requisition.⁵⁸

From the photographic evidence, walking races and football were very popular, and conducted to a fair competitive standard, at least among the men involved.

As to reasons for the active participation of the men in sport, logical conjectures can be made, many of which fit why any young man engages in sport. Anderson argues that disabled veterans engaged in sports for a number of reasons: sport was an active part of service life, so carrying on would seem natural; it allowed them a resumption of as full a life as possible; it helped alleviate boredom; and it was “one way that a young disabled man could re-establish his masculinity and demonstrate that his disability had not changed him.”⁵⁹ Add to this the opportunity for socialisation, including with the opposite sex at times as spectators and even participants, and the motivations are obvious.

This brief snapshot of disability sport at Roehampton during the war offers a direction for future research. Any scholars wishing to trace the history of disability sport may find promise in more local histories of events. A set of ground-clearing studies is needed to recover the missing history, which could then be built up into a bigger body of knowledge. The medical context of disability during the First World War has been explored by a handful of scholars in recent years. The impact of this context, and how it affected the lives of the men and women involved, remains unknown.

To conclude, during the First World War, physicians turned to forms of exercise, sports and games as an integral part of their reconstruction programs. Through their use of these forms of therapeutic movement, First World War physicians set precedents for later doctors and rehabilitation specialists, and constitute an important link in the precursors to current forms of disability. Much of their work reflected and reproduced wider societal beliefs about people with disabilities. For their part, disabled veterans actively engaged in sports and games both as a means of re-establishing their lives, and for sheer physical and social enjoyment. As such, the

First World War constitutes a significant, but as yet largely unrecognized period in the historical trajectory of disability sport, adapted games and physical education, and medical rehabilitation.

¹ See for example Greggson, Ian: *Irresistible Force: Disability Sport in Canada*. Victoria, British Columbia 1999, p. 108; Guttman, Sir Ludwig: "Development of Sport for the Spinal Paralyzed", in 112 *Olympic Review* (March, 1977), p. 111; Labonowich, Stan: *Wheelchair Basketball: A History of the National Association and an Analysis of the Structure and Organization of Teams*. Ph.D. Dissertation, University of Illinois, 1975; Scruton, Joan: "Sir Ludwig Guttman: Creator of a World Sports Movement for the Paralyzed and Other Disabled", in: 17 *Paraplegia* (1979), p. 52; Robert Steadward and Cynthia Peterson, *Paralympics: Where Heroes Come*. Edmonton 1997, pp. 21-25, 29; Strohkendl, Horst: *The 50th Anniversary of Wheelchair Basketball*. Munster, Germany 1996, pp. 12, 16-19; Webborn, A.D.J. "Fifty Years of Competitive Sport for Athletes with Disabilities: 1948-1998", in: 33 *British Journal of Sports Medicine* 1998, pp. 138-139. One notable exception to this is Anderson, Julie: *The Soul of a Nation: A Social History of Disabled People, Physical Therapy, Rehabilitation and Sport in Britain, 1918-1970*. Ph.D. Dissertation, De Montfort University, 2001.

² The word "discourse", in the sense used here, refers to more than just what is spoken or said. Discourses are structured ways of speaking about the world of social experience, and organizing meaning within a social context. Peter Sedgwick, "Discourse", in: Edgar, Andrew & Sedgwick, Peter (eds.): *Key Concepts in Cultural Theory*. London 2002, pp. 116-119. Social practices and institutions such as education, politics, the law, or in this case, medicine, are constituted by and situated within forms of discourse. This paper is a small portion of a wider work on medical discourse. See Mason, Fred: *Straightening Children and Reconstructing Men: Medical Discourse on Physical Therapies and People with "Disabilities," 1885-1920*. Ph.D. Dissertation, University of Western Ontario, 2004.

³ I have attempted to keep with the practice of using people first language throughout, which stresses the person and not the disability. Hence, "people with disabilities". However, when it comes to the historical context of veterans with disabilities these (primarily) men were looked at as disabled first, and as a veteran second. Still, their status as "veteran" has to be stressed, as disabled veterans were viewed differently than other people with disabilities. Following from Gerber, I use the term "disabled veteran" to refer to those from the service whose disabilities precluded them from combat roles. See Gerber, David A: "Introduction: Finding Disabled Veterans in History", in: Gerber, David A. (Ed.): *Disabled Veterans in History*. Ann Arbor, Michigan 2000, pp. 18-19, note 60.

⁴ Byrom, Brad: "A Pupil and A Patient: Hospital Schools in Progressive America", in: Longmore, Paul K. & Umansky Lauri (eds.) *The New Disability History: American Perspectives*. New York 2001, pp. 133-156; Koven, Seth: "Remembering and Dismemberment: Crippled Children, Wounded Soldiers and the Great War in Great Britain", in: 99 *American Historical Review* 4 (1994), pp. 1167-1202.

⁵ Collins, Joseph: "The Prognosis of Tabes: An Analysis of 140 Cases of Locomotor Ataxia," in: LXXXII *The Medical News* (1904), p. 392; Davy, R. "Clinical Lecture on Spinal Caries", in: *British Medical Journal* II (1885), pp. : 8-10.

⁶ Raymond, Henry I.: "Leiter General Hospital – Discharges for Disability", in: LXXIII *The Medical News* (1898): 201.

⁷ Norden, Martin F.: *The Cinema of Isolation: A History of Physical Disability in the Movies*. New Brunswick, New Jersey 1994. See chapters one and two.

⁸ Murphy, Robert: "Encounters: The Body Silent in America", Ingstad, Benedicte & Whyte, Susan Reynolds (eds.): *Disability and Culture*. Berkeley 1995, pp. 140-158.

⁹ Goffman, Erving: *Stigma: Notes on the Management of Spoiled Identity*. New York 1963 pp. 2-4.

¹⁰ All three supported physical therapies in general, but each had more specific concerns. McKenzie promoted exercise, Snow electricity, and Fox, hydrotherapy.

¹¹ Byrom: "Pupil", 133-156, pp. 152-155; Koven: "Remembering", 1162-1202, pp. 1170-1185. Mason: *Children*, pp. 81-104, 188-194.

¹² For example, R. Tait McKenzie commanded a major Home Command Depot in the Royal Army Medical Corps during the war, and Sir Robert Jones, the leading orthopedist, rose to the highest ranks of the service and supervised the nation's vocational rehabilitation program.

¹³ Gerber: "Introduction", pp. 18-19.

¹⁴ Whalen, Robert Weldon: *Bitter Wounds: German Victims of the Great War, 1914-1939*. Ithaca 1984, 95. Estimates are difficult. Canada's numbers, for example, would rise to 77,000 if all men on pensions of some sort were included. See Morton, Desmond & Wright, Glenn: *Winning the Second Battle: Canadian Veterans and the Return to Civilian Life, 1915-1930*. Toronto 1987, p. 9.

¹⁵ Generally, programs were set up in nearly all warring nations to move disabled veterans through medical care, into retraining and re-education programs designed to move them back into the workplace. See McMurtrie, Douglas C.: *The Evolution of National Systems of Vocational Re-Education of Disabled Soldiers and Sailors*. Washington, 1918. These, of course, had varying degrees of (non)success.

¹⁶ Ruby Heap: "'Salvaging War's Waste': The University of Toronto and the 'Physical Reconstruction' of Disabled Soldiers the First World War", In: Montigny, Edgar-André & Chambers, Lori (eds.): *Ontario Since Confederation: A Reader*. Toronto 2000, 214-234, p. 216.

¹⁷ Mason, Fred: "R. Tait McKenzie's Medical Work and Early Physical Activity Programs for People With Disabilities", in: *Sport History Review* (in Press).

¹⁸ "Discussion on the Treatment of War Injuries by Electrical Methods", in: *Proceedings of the Royal Society of Medicine*, Electrotherapy (1916-17): 61; Jones, Sir Robert: "Military Orthopedic Surgery: Its Scope and its Aims", in: CLXXIX *Boston Medical and Surgical Journal* (1918), pp. 4416-421; "Orthopædic Centres in Scotland for the Treatment of Disabled Soldiers and Sailors", in: *Lancet* (1918) II, pp. 118-119; Sjögren, T. "The German Plan for Care, Reeducation, and Return to Civil Life of Disabled Soldiers and Sailors" in: LXX *Journal of the American Medical Association* (1918), pp. 379-381.

¹⁹ As soon as the swelling goes down: Sutherland, R. W. & Christie, J. M.: "Some Notes on Military Orthopedics", in: *British Medical Journal* (1920) I, p. 762. As soon as anesthetic wears off: Mumford, E. B.: "Willem's Method of Active Mobilization in Surgical Joints," in: XCVII *Medical Record* (1920), pp. 357-359.

²⁰ Bott, E.A.: "Mecanotherapy", in: XVI *American Journal of Orthopedic Surgery* (1918), pp. 441-443; Jones, "Surgery", 115-119.

²¹ McKenzie, R. Tait: "Treatment of Convalescent Soldiers by Physical Means", in: IX *Proceedings of the Royal Society of Medicine*, Surgical Section (1916), 31-70, pp. 41-42, 46-47.

²² Mumford, Eugene B. "Application of Curative Therapy in the Workshop," *Journal of Orthopedic Surgery* (1919), pp. 679.

²³ Bott: "Mecanotherapy," p. 115.

²⁴ Bryant, John: "The Physical Treatment of Convalescents in Surgical and Medical Wards", in: XXXVII *American Journal of Electrotherapy and Radiology* (1920), pp. 85-92. Bryant lists about a page of specific exercises on pp. 87-88.

²⁵ Hemingway, Ernest: "In Another Country", in: *Men Without Women*. New York, 1928.

²⁶ Heap: "War's", p. 221.

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- ²⁷ McKenzie, R. Tait: *Reclaiming the Maimed: A Handbook of Physical Therapy*. New York, 1918, pp. 71-74.
- ²⁸ In a sample of hundreds of articles on disabled veterans in the *Index Medicus* in 1915, 1918 and 1920, only 18 refer to sports and games as therapies.
- ²⁹ Sandall, T. E.: "Treatment of the Convalescent Soldier" in: *Lancet*, (1920) I: pp. 1352-1356.
- ³⁰ Sandall: "Treatment", pp. 1355-1356.
- ³¹ Sjögren: "Plan", p. 379.
- ³² McMurtrie, Douglas C. "Method and Organization of Re-Education for War Cripples in Germany", in: XCIII *Medical Record* (1918), 881-885, p. 883.
- ³³ McMurtrie: "Method", p. 883.
- ³⁴ See commentary by a Doctor McFee and Henry Stewart in the discussion of a paper by Bryant: "Treatment", pp. 88-91. After they discussed their activities in detail, Bryant himself pointed out that time was set aside for games, aside from the prescribed exercises, as part of his convalescent care.
- ³⁵ McFee, in Bryant: "Treatment", pp. 88-89.
- ³⁶ Stewart, in Bryant, "Treatment, pp. 89.
- ³⁷ Jones, "Surgery": 117-119; Lane, George: "Military Convalescent Hospitals", in: *BMJ* (1918) I, pp 574. "The Problem of the Surgical Treatment of Disabled Men", in: *BMJ* (1917) II: 658- 659, pp. 659.
- ³⁸ Beard, J. Howard: "The Rehabilitation of the Disabled Soldier" in: XXV *Interstate Medical Journal* X (1918), 223-229, p. 224; Magnuson, Paul Budd: "Physical Reconstruction," XCIII *Medical Record* (1918), p. 699-700; O'Reilly, "The After-Care of the Crippled Soldier", in: XXV *Interstate Medical Journal* (1918)531-544, p. 536.
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