

Directory of Sport Science

6th Edition

Edited by

Herbert Haag, Kari Keskinen, Margaret Talbot

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Part I. Introduction

FOREWORD

Even though Sport Science is young as a science when compared to the so called fundamental or pure basic sciences like biology, chemistry, education, mathematics, physics etc., the research traditions and the bodies of knowledge have become well-established. Characteristically, Sport Science leans on knowledge and scientific methodology that have originally been developed by fundamental sciences. In fact Sport Science is not a single science, rather a vastly heterogeneous family of sciences which share the same area of research interest: Sport and Physical Activities. Therefore, instead of Sport Science one might properly speak about Sport Sciences. While a common model for all Sport Sciences has not yet been established, we can say with confidence that Sport Science research tends to be multi-disciplinary in nature and its scope of interest is extensive.

The International Council of Sport Science and Physical Education (ICSSPE) is committed to promoting Sport Science through its activities worldwide. The primary objectives of ICSSPE are to:

1. encourage international cooperation in the field of Sport Science
2. facilitate differentiation in Sport Science whilst promoting integration of various branches and
3. make scientific knowledge of Sport Science and physical education available.

Since its first version (Vade Mecum, 1998) the Directories of Sport Science have consistently served these three objectives.

Like its predecessors, the 6th Edition is constructed so that it is easy to become acquainted with the world of the Sport Sciences. The main difference between this and previous editions is that the different scientific disciplines have been arranged into two main categories: first, Fundamental Academic Disciplines of Sport Science, as presented in Chapter II, and second, Academic Disciplines with Professional Orientation, as presented in Chapter III. This division acknowledges the different roles of fundamental and applied sciences. Fundamental Sport Sciences develop basic knowledge and research methodology that seek to describe basic laws and phenomena, having less emphasis on practical applications, whilst offering a common set of concepts, constructs and theories which can be applied as appropriate.

The authors of the chapters are all experts in their field. The Editors greatly appreciate their most valuable contribution to the Directory and are grateful to those authors who laid the basis for the earlier directories by writing the previous versions of individual chapters. The Editors emphasise that there is no copyright for single authors to the knowledge presented here. Rather, it is hoped that the scientific community will collectively develop the presented material still further. The Editors also acknowledge Katrin Koenen, the Publications Manager of ICSSPE, for her most dedicated work in preparing this Directory for publication. Lastly, the Editors welcome Human Kinetics Publishers' collaboration with ICSSPE in publishing this Edition.

While Sport Science is in an ever-diversifying state, it is likely that the 7th Edition of the *Directory of Sport Science* will be published in a few more years. In the meantime, the Editors hope you enjoy reading and using this edition for the benefit of Sport Science and its students, scholars and researchers.

The Editors

Herbert Haag (GER) – Kari L. Keskinen (FIN) – Margaret Talbot (UK)

THE INTERNATIONAL COUNCIL OF SPORT SCIENCE AND PHYSICAL EDUCATION (ICSSPE)

Over 50 years of Science, Service and Advocacy

The International Council of Sport Science and Physical Education (ICSSPE) is the world's prominent network of sport, sport science and physical education.

The organisation was created in Paris, France, in 1958, by a group of well-known and acknowledged researchers who saw it as important that a globally operating organisation would represent the growing and diverse field of sport science.

The intention of those participating in the creation of this organisation was to initiate research and disseminate findings from sport science, and to promote their practical application in cultural and educational contexts for the benefits of sport and human society. The advantage was seen in the efficient cooperation of scientific disciplines to react to complex developments in sport, in the differentiation of the sport sciences, as well as the integration of the various branches, and in the effective promotion of sport scientific knowledge.

All these considerations led to the mission of ICSSPE, which is to represent sport science and physical education worldwide by disseminating research results, implementing relevant projects, and encouraging links between disciplines and members.

The 300 national and international governmental and non-governmental organisations, federations and institutes of sport, sport science and physical education that comprise the membership of this unique global network cooperate in single-, multi- or inter-disciplinary work. Being a member of this network facilitates cooperation in a variety of settings, such as: governmental and non-governmental; scientific and practitioner/policy; institutional and organisational; national and international; within and between disciplines.

The current working programme of ICSSPE emphasises the importance of healthy living across the lifespan and the continuum of human performance, ethics, professionalization, and quality physical education. This programme is translated into practice through the working channels of 'Science, Service and Advocacy':

- 'Science' stands for analysing and initiating research across all disciplines using the knowledge and experience of expert organisations and scientific institutions
- 'Service' stands for facilitating the exchange of information among members and partners by organising conferences, meetings and seminars and designing publications

- 'Advocacy' stands for acting as a voice for sport science and physical education and encouraging international initiatives to promote and improve the position of physical education as well as sport science as a strong partner for the development of human society.

All this makes ICSSPE a unique agent for multi- and inter-disciplinary research, events and publications, and a respected partner for the United Nations and its agencies, as well as for the sports movement, as a whole.

Together with the International Federation of Sports Medicine, the International Olympic Committee, and the International Paralympic Committee, ICSSPE owns the rights for the International Convention on Science, Education and Medicine in Sport (ICSEMIS), one of the largest gatherings of scientists and practitioners that occurs every four years in the home country of the Summer Olympic and Paralympic Games. This unique event attracts thousands of participants encouraging inter-disciplinary approaches to current and relevant questions in all forms of sport.

This sense of collaboration becomes obvious, for example, in the efforts against doping, where measures are undertaken by governments and sports groups, from sport law, sport philosophy, sport medicine, sport pedagogy, and other relevant subdisciplines of sport science.

Likewise, the accessibility of Paralympic athletes to other forms of competitions is being considered by the United Nations, which recognises this as a human right. Again, sports groups are being led to look at the legacy of their activities, as are the different scientific disciplines, such as sport biomechanics and exercise physiology.

A third example of cooperation is the joint approach by UNESCO, WHO, IOC, and IPC, under the leadership of ICSSPE, to strengthen physical education for all children around the world.

ICSSPE uses several channels to realise its mission, and to implement its working programme. This programme is decided by its membership during the General Assembly that occurs every two years. The President's Committee, the Executive Board, the Editorial Board and the Associations' Board implement these decisions, supported by the staff of the Executive Office in Berlin, Germany.

Alongside a variety of initiatives to develop sport, sport science and physical education, board members and office staff organise scientific events and training seminars, produce scientific publications and information material, disseminate news and provide expert knowledge for members and partners.

All this is realised through an active membership, as well as through arrangements with the hosts of the organisation, the city of Berlin and the state of Germany, with long-standing cooperation with the International Olympic Committee.

ICSSPE would like to thank all involved partners for their dedicated work towards the production of this unique publication.

PREFACE

Herbert Haag, Kari L. Keskinen and Margaret Talbot

The Directory of Sport Science is a unique venture. Experts from across a wide range of academic disciplines and from around the world have contributed state of the art accounts of the key elements of Sport Science. The Editors have used this term in an inclusive way to capture all the academic disciplines that contribute to sport science. Taken together, these chapters offer an unrivalled presentation of this distinctively diversifying field, its structures, its academic disciplines, its thematic areas and its preoccupations.

The origin of the Directory dates back to 1998, when it was called 'Vade Mecum'. The title - meaning 'reference guide or textbook' - captured the intention of the new venture admirably well, if not its audience. From its third edition, the volume became the *Directory of Sport Science*, but retained the primary object of gathering and sharing the core sources of knowledge that make up the field of Sport Science.

It is appropriate that the Directory has been led from its inception by the International Council of Sport Science and Physical Education (ICSSPE) as the international umbrella body for all academic sports groups, with a remit to bridge the gaps between disciplines and across continents.

This, the sixth edition of the Directory, is virtually a new volume. Many chapters have been revised and updated to reflect the ever-changing state of knowledge. At the same time, the fact that some authors have built upon earlier versions highlights the developing traditions or 'paradigms' that give shape and content to the field. Other chapters are completely new. These new contributions focus mainly on the themes that occupy sport researchers. They also mark the tendency within the subject to move from mono-disciplinary to multi-disciplinary work, and from multi-disciplinary to inter-disciplinary research and practice. In other words, this edition of the Directory, like Sport Science itself, is characterised by increasing international collaboration.

The five parts of the Directory of Sport Science are as follows:

Part I: Introduction

Part II: Fundamental Academic Disciplines of Sport Science

Part III: Academic Disciplines with Professional Orientation

Part IV: Multi-disciplinary Thematic Areas

Part V: Sport Science Careers

BIOGRAPHIES

The individual chapters are primarily the responsibility of their authors. They represent valuable overviews of the disciplines and themes that make Sport Science such an exciting academic field, and each can be profitably read alone. Taken as a whole, however, the numerous contributions offer a view of Sport Science that can and should inform the future development of the subject around the world.

Editors

Herbert Haag

Herbert Haag is Professor Emeritus at the University of Kiel, Germany. He is the former President of ISCPES and former vice-president of ICHPER. Currently, he serves as member of the Editorial Board and speaker of the Associations' Board of ICSSPE. In 2011, he was awarded an honorary professorship at Tshwane University of Technology, South Africa. He is also a member of the American Academy of Kinesiology.

Professor Haag holds a State Teacher's degree in Physical Education, History and Political Science from the German Sports University Cologne and the University of Tübingen, an MS in Physical Education from the University of Washington and a PhD in Sport Science, Education and Philosophy from the University of Tübingen. His teaching positions included professorships at the Universities of Tübingen, Gießen and Kiel. In Kiel, he was also director of the Institute of Sport Science. During a sabbatical from 1991 to 1994, he served as founding director of the 'German Olympic Institute' in Berlin.

His major research and teaching areas are sport pedagogy, comparative sport science, sport philosophy, research methodology of sport science, Olympic issues and networking in sport science. Current examples for his editorial work include 'Foundations for the Study of Sport Science' (6 volumes, with Prof. Dr B. Strauß and Dr F. Mess), *Practical Ideas* (with Prof. Dr K. Roth and Dr Chr. Kröger), *Movement/Play/Sport* (with Dr F. Mess) and the *International Journal of Physical Education* (with Research Assistant M. Holzweg), a review publication.

Kari L. Keskinen

Dr Keskinen is the Executive Director of the Finnish Society of Sport Sciences since 2004. Earlier he served the University of Jyväskylä, Finland as the Professor of Exercise Physiology. Dr Keskinen is the Chair of the Steering Group Biomechanics and Medicine in Swimming of the World Commission of Science and Sport. Dr Keskinen is the Chair of the Editorial Board and the member of the Executive Board of the International Council of Sport Science and Physical Education.

Dr Keskinen has published over 250 original scientific and professional articles, books and book

chapters in Sport Biomechanics and Exercise Physiology. Dr Keskinen has given scientific papers and invited presentations in over 200 scientific Conferences and Coaches' Seminars. Dr Keskinen has organised a number of national and international scientific conferences. Dr Keskinen was the organiser and the main proceedings editor of the *VIII International Symposium Biomechanics and Medicine in Swimming* 1998. Dr Keskinen has lectured for both national and international programmes for Physical Education, Sport Coaching, Sport Management, Physiotherapy and Health Education at the University of Jyväskylä, Finland.

Margaret Talbot

Margaret Talbot is President of the International Council of Sport Science and Physical Education (ICSSPE), the largest such umbrella organisation in the world. She was President of the International Association of Physical Education and Sport for Girls and Women from 1997 to 2005, when she was awarded an Honorary Life Membership. She is committed to the promotion of multi-disciplinary scholarship and research which supports enquiry in and delivery of high quality sport science and physical education. Her own research has focused on equity and diversity, and policy processes in physical education and sport.

She is Principal of Margaret Talbot Consulting, which has undertaken consultancies on international and national school sport strategy; establishing 21st Century physical education curricula in several countries; the use of sport and physical education in promoting girls' education; national strategy development for women's sport; and strategic approaches to international student recruitment. Previous posts include Chief Executive of the Association for Physical Education (UK) and the Central Council of Physical Recreation, the umbrella organisation for English and UK non-governmental sport organisations; and Carnegie research professor and Head of Sport at Leeds Metropolitan University.

Professor Talbot was appointed Officer of the Order of the British Empire (OBE) for services to physical education and sport in 1993; and was awarded an Honorary Fellowship of the University of Chichester in 2008. Other awards include the AD Munrow Award by her peers in University sport and physical education; Fellowship of the Royal Society of Arts; the Ling Award of the Physical Education Association UK; Honoured Member of the Association for Physical Education (UK); Companionship of the Institute of Sport and Recreation Management; and Pathfinder Award from the USA National Association of Girls and Women in Sport.

Authors

Richard Bailey

Richard Bailey, PhD, who currently lives in Florence, Italy, has been Full Professor at Canterbury, Roehampton and most recently Birmingham Universities in the UK. He is the author of numerous books and articles on sport. Dr Bailey has advised UNESCO, WHO, IOC, EU, as well as the

Professional Golfers Association, Nike and Unilever. His current research projects include an examination of the life experiences of elite female sports players, policy development in talent development, and the philosophy of skill development.

Wolfgang Baumann

Wolfgang Baumann graduated in Sports Economics, Sports Science and English Language at the Universities of Bonn, Bayreuth and Stirling (Scotland). As the elected TAFISA Secretary General he works full-time as the Executive Director at the TAFISA Office in Frankfurt, Germany. He has contributed to and developed various international and national Sport for All programmes and campaigns. His main working areas are marketing and management of Sport for All and comparative studies of Sport for All. He has been consultant for Sport for All in more than 30 countries and invited as a speaker to numerous congresses and seminars worldwide. Moreover, he was appointed guest teacher at the University of Heidelberg. He has published on the topic in magazines, professional journals and books. Wolfgang has been appointed Special Advisor for Sport for All International of the German Olympic Sport Federation (DOSB), and is the former Executive Director of the DOSB and the Sport Marketing Agency Deutsche Sport Partner GmbH. His international positions include his seat on the IOC Sport for All Commission and on the Executive Board of the International Council of Sport Science and Physical Education.

Ellen Burton

Ellen Burton MPH, CHES currently serves as the American College of Sports Medicine's Program Officer, Exercise is Medicine. She works with programme partners and national organisations to promote the programme's message that physical activity is an integral part of the treatment and prevention of chronic disease. Ellen Burton has previously served as Director of the Money Follows the Person Initiative with the Indiana State Division of Aging and as Director for the Maryland Association of County Health Officers with the Johns Hopkins Bloomberg School of Public Health. Ms Burton holds a Masters of Public Health from Boston University and is a Certified Health Education Specialist.

Lindsay Carter

After studying at the Universities of Otago (1950-1952) and Auckland (1953). Lindsay Carter held research and teaching positions at the National School of Physical Education (University of Otago) in 1954-55. From 1956-59 he was a Fulbright Scholar and research assistant at the University of Iowa, Iowa City, USA, where he obtained the Masters and Doctorate degrees. He taught at the University of Otago and was from 1962 to 1992 a professor in the Department of Physical Education at San Diego State University, San Diego, USA, where he taught applied anatomy and kinesiology, biomechanics, growth and development, and kinanthropometry. Currently he is Professor Emeritus in the School of Exercise and Nutritional Sciences at San Diego State University and continues his research in kinanthropometry, along with consulting, workshops and invited presentations. Lindsay Carter's research work has been focused on the structure and function of athletes and non-athletes. In addition, he is the co-developer of a method of assessment of somatotype, the Heath-Carter Somatotype Method, a method which is presently the most widely used in body build research.

Laurence Chalip

Laurence Chalip is Professor and Coordinator of the Sport Management Program at the University of Texas at Austin. His research focuses on policy and marketing. He has published three books, four research monographs, and over 100 articles and book chapters. He is a Research Fellow of the North American Society for Sport Management, and has served as Editor of *Sport Management Review* and *Journal of Sport Management*. He is currently an Associate Editor for *Journal of Sport and Tourism*. He consults with sports organisations throughout the world, and was named to the International Chair of Olympism by the International Olympic Committee and the Centre for Olympic Studies. He has been awarded the Earle F. Zeigler Award by the North American Society for Sport Management, and the Distinguished Service Award by the Sport Management Association of Australia and New Zealand.

Rosa López de D'Amico

Rosa López de D'Amico has a Bachelors degree in Physical Education (major in Sport) and a Masters degree in Education (major in Literature). She wrote her PhD thesis on sport regulations. She was a Postdoctoral Fellow at the University of Sydney (Ewing Postdoctoral Fellowship), and is now Professor at the Universidad Pedagógica Experimental Libertador in Maracay, Venezuela. Furthermore, she is Coordinator of the Research Centre EDUFISADRED which conducts research focused on physical education, comparative studies, sport policy, sport management, culture and gender. She is Chair of ICSP (2008-2012) and ICSSPE Editorial Board member as well as Vice President of ISCPES and IAPESGW. Rosa-López de D'Amico is also President of ALGEDE (Latin American Association for Sport Management), and Secretary of ALESDE. She has published in Spanish, English and French in reviewed journals, books and technical programmes.

Maria Dinold

Maria Dinold has been a teacher, coach, lecturer and researcher in the fields of physical education, adapted physical activity, sport (Volleyball) and dance throughout a long career. After finishing her first degree (MA) in 1987, her teaching and working involved adapted physical activities, specifically inclusive dance with the private club 'Ich bin OK'. Maria Dinold received her doctoral degree (PhD) at the University of Vienna, Austria in 2000. In 1994, she became University Assistant at the Department of Sport Pedagogy – now part of the Centre for Sport Sciences at the University of Vienna – and remains in this position as part-time Assistant Professor. Maria Dinold's research focuses more specifically on adapted physical education/activity (theory as well as practical application), socio-psychological dimensions of disability in sport, recreation and physical education, inclusion of people with disabilities through physical activities, and inclusive pedagogy, specifically inclusive dance pedagogy.

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Edson Medeiros Filho received his Bachelors and Masters degrees in Physical Education at the Universidade Federal de Minas Gerais, Brazil. He is currently a PhD student in Sport and Exercise

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Chris Gratton

Chris Gratton is Professor of Sport Economics at Sheffield Hallam University, co-director of the Sport Industry Research Centre, and Assistant Dean in the Faculty of Health and Wellbeing. Chris Gratton is the UK representative on the EU Workshop on Sport and Economics, and Chair of Sport England's Active People Expert Advisory Group. He is co-author of *Economics of Sport and Recreation*, with Peter Taylor.

Dieter Hackfort

Dieter Hackfort is Professor for Sport and Exercise Psychology at the University of Munich and Head of the Institute for Sport Science. He received his doctoral degree in 1983 from the German Sport University. Since 1986 he has served as a counsellor for professional performers and elite athletes. From 1996-2007 Dieter Hackfort served as the Editor of the *International Journal of Sport and Exercise Psychology (IJSEP)*. His research has been published in 27 books and edited volumes, and in more than 160 contributions in national and international journals. His main research interests are in (1) performance enhancement management; (2) stress and emotions with respect to its functional meaning for action regulation; (3) self presentation; (4) career management; and (5) the development of a mental test and training programme. These various issues are connected with the development of an action theory approach and the development of psycho-diagnostic measurements. From 2005 to 2009 Dieter Hackfort served as the President of the International Society of Sport Psychology (ISSP). From 2009 to 2010 he served as a member of the Executive Board of ICSSPE. Dieter Hackfort was awarded repeatedly for his outstanding research and leadership. For example, in 2001 he received the Honour Award of the International Society of Sport Psychology (ISSP), and in 1999 he was appointed Honour Professor of Wuhan Institute of Physical Education, China.

Ken Hardman

Ken Hardman, PhD, holds a professorship in the Institute of Sport and Exercise Science at the University of Worcester, UK. He is an Honorary Member of ICSSPE, President of the Fédération Internationale d'Education Physique (FIEP) Physical Education and Sport Section, a former President of the International Society for Comparative Physical Education and Sport (ISCPES) and is a Fellow of the National Association for Physical Education, UK, the Royal Society of Arts, and International Fellow of the European Academy of Kinanthropology and Physical Education. He has advisory positions with UNESCO, WHO and the IOC. International and national awards include the International FIEP Cross of Honour of Physical Education: Gold Cross, ICSSPE Philip Noel-Baker Research Award, ISCPES Distinguished Service Award and the Ling Award from the Physical Education Association, UK.

Mike Hartill

Mike Hartill has a Bachelors degree in Sport and Recreation Studies and Social Science from the University of Birmingham, a Masters in Sport and Leisure Studies from the University of Wales Institute, Cardiff, and a PhD in Sociology from Edge Hill University, UK. He is a Senior Lecturer in Sport Sociology at Edge Hill University where he lectures on Sport Studies. With a background in elite level youth sport, Mike Hartill's main research focus is child abuse and exploitation in sport. He sits on the Child Protection in Sport Research and Evidence Advisory Group in the United Kingdom, and has lectured on child maltreatment and safeguarding in sport for the past 10 years.

Hazel Hartley

Hazel Hartley is a Principal Lecturer and has worked at Leeds Metropolitan University for 32 years, developing sport law modules and courses for over 25 years. She is presently course leader of the MA Sport, Law and Society. Her teaching and research in socio-legal studies applied to sport and leisure contexts includes negligence, corporate liability and health and safety duties of executives, disciplinary processes and violence on the sports field. Over the last 23 years Hazel Hartley has been a research activist in the area of disasters, corporate systems failures and the law, conducting long-term research on the Hillsborough and Marchioness-Bowbelle disasters. She has submitted evidence to various House of Commons Select Committees on Corporate Manslaughter and the role of the HSE/HSC. Hazel is a member of the Editorial board of the International Sports Law Journal and the advisory board of the International Sport Law Centre in The Hague. She is the author of *Sport, Physical Recreation and the Law* (2009) published by Routledge, Abingdon.

Annette Hofmann

Annette R. Hofmann has a MA degree in American Studies and Sport Studies from the University of Tübingen, Germany and, in 2000, she received her PhD degree on 'German Turnen in the United States'. Presently she is Professor for Sports Studies at the Ludwigsburg University of Education in Germany, and Head of the Department. Annette Hofmann is the President of the International Society for the History of Sport and Physical Education (ISHPES) and Vice President of the German Gymnastic Federation (Deutscher Turner-Bund). She is a council member of the North American Society for Sport History (NASSH). Her main areas of research include German-American sports, integration, sport and the diseased body, gender studies and various aspects of ski history. She is the review editor of the *Journal of Sport History* and has edited a number of books and published over 100 articles on sport historical and sport pedagogical topics in national and international journals.

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Mary Hums

Mary A. Hums (PhD Ohio State University, MA/MBA University of Iowa, BBA University of Notre Dame) is Professor of Sport Administration at the University of Louisville. She was named the North American Society for Sport Management's 2009 Earle F. Zeigler Lecturer, the organisation's most prestigious academic honour. In 2008, she was an Erasmus Mundus Visiting International Scholar at Katholieke Universiteit in Leuven, Belgium. In 2006, the United States Olympic Committee selected her to represent the United States at the International Olympic Academy Educators Session in Olympia, Greece. She volunteered for the 1996 Summer Paralympic Games in Atlanta, 2002 Winter Paralympic Games in Salt Lake City, and 2010 Winter Paralympic Games in Vancouver. In 2004, she lived in Athens, Greece, working with both the Olympic (Softball) and Paralympic (Goalball) Games. Mary Hums has co-authored / co-edited five sport management textbooks, more than 30 journal articles, and has made over 150 presentations to various scholarly associations both in the United States and abroad. She was a co-contributor to Article 30.5 of the 2006 United Nations Convention on the Rights of Persons with Disabilities and is on the Advisory Council for the Olympism and Development Center, Brown University. She is a member of the Indiana ASA Softball Hall of Fame and also the Marian High School (Mishawaka, Indiana) Athletic Hall of Fame.

Adrian Hutber

Adrian Hutber was appointed Vice President of Exercise is Medicine^R at the American College of Sports Medicine (ACSM) in 2008, after serving as the vice president of a fitness corporation and as the Director of the Distance Education Division of the world's largest physical activity publisher, Human Kinetics. Exercise is Medicine^R (EIM) is the multi-organisational, multi-national initiative co-founded by the American Medical Association and ACSM and subsequently coordinated by the ACSM to integrate the scientifically proven benefits of physical activity to prevent and treat chronic disease into the world's health care systems. Adrian Hutber has a PhD in Exercise Physiology. He has been invited to give keynotes and presentations about EIM at US and international scientific and medical conferences in 16 countries on four continents and has helped to establish six EIM Regional Centres and 25 plus EIM National Task Forces, all with the goal of making physical activity assessment, prescription, and referral part of health care systems globally. Adrian Hutber has published in physiology and sports medicine scientific journals, has authored the *Pre-Exercise Health Screening* course (Human Kinetics, 2001), is a Board member of the National Advisory Council for Cancer and Exercise in the USA, and continues to serve as a reviewer for scientific journals, including the *British Journal of Sports Medicine*.

Yeshayahu Hutzler

Yeshayahu Hutzler is Senior Lecturer at the Zinman College for Physical Education and Sport Sciences at the Wingate Institute, Israel, Head of Research and Development at the Israeli Sport Center for the Disabled, and is Past President of the International Federation of Adapted Physical Activity (IFAPA). From the beginning of his career, he has followed a multi-disciplinary research focus with an interest in the physiological, as well as psycho-social, aspects of movement performance of persons with disabilities. He has published several books on adapted physical activity and motor learning and control, and more than 60 articles in peer reviewed international and national journals. In addition to

previous publications on the physical activity of persons with spinal cord injury and cerebral palsy he has recently published experimental and review articles on intellectual disabilities and autistic disorders. Among his contributions to the field of adapted physical activity are addressing empowerment as a goal and method in 1999, as well as developing the Systematic Ecological Modification Approach (SEMA) for managing curricular and practical adaptations in the field. Yeshayahu Hutzler was, and still is, involved in many European Projects including the European Master Mundus Program in Leuven and associated Universities in Limerick, Oslo and Olomouc.

Anastasios Kaburakis

Anastasios Kaburakis holds PhD and MS degrees from Indiana University in Bloomington, IN and a Law degree from Aristotle University of Thessaloniki, Greece. He held faculty appointments at Southern Illinois University Edwardsville, Indiana University Bloomington, and Washington University Law School in St Louis. He is currently an Assistant Professor of Management and Sports Business in the John Cook School of Business, Saint Louis University. Prior to academia, he practised law and is licensed through the Thessaloniki Bar Association. While in Greece, he coached basketball at the junior and professional club levels, the national teams of Greece, and served the Greek Basketball Federation, FIBA, and several European educational institutions on legal and policy matters.

He has published articles and presented research on International Comparative Sport Law, NCAA Compliance, particularly pertaining to International Student-Athletes, recruiting, amateurism, gambling, coaches' contracts, institutional liability, and intellectual property applications in sport. He regularly consults international sport governing bodies, NCAA Division I governance committees, policy-drafting actors in member conferences and coaches' associations, member institutions' compliance and coaching staff members on international recruiting, amateurism policy, and legal issues in intercollegiate athletics settings. He serves as an advisor for various international sport consulting firms.

Darlene Kluka

Darlene A. Kluka, PhD, has published in motor behaviour and sport science journals. She holds research fellow status in the American Alliance of Health, Physical Education, Recreation and Dance (AAHPERD) Research Consortium and in the International Academy of Sports Vision (IASV). She has contributed as editor/associate editor or editorial board member to the *International Journal of Sports Vision*, *Women in Sport and Physical Activity Journal*, *International Journal of Volleyball Research*, and *Journal of Coaching Education*. Darlene Kluka has been a reviewer for the *Journal of Human Movement Sciences*, *British Journal of Sports Medicine*, *Journal of Military Medicine*, *African Journal of Health, Physical Education, Recreation and Dance*, *International Journal of Sport Communication*, *International Journal of Sport Management*, and *Sport Management Education Journal*. She received the AAALF International Relations Council Scholar, ICHPERSD Scholar, ICSSPE Philip Noel Baker Research, AAHPERD Southern District Scholar, LAHPERD Scholar, and Texas Woman's University Distinguished

Alumni awards. She is a member and past president of the National Association for Girls and Women in Sport (USA), the International Association of Physical Education and Sport for Girls and Women (IAPESGW), Vice President of USA Volleyball, and a founding member of the USA Volleyball Sports Medicine and Performance Commission. She has been inducted into the National Association of Sport and Physical Education (NASPE), the American Volleyball Coaches (AVCA), and the Illinois State University College of Applied Science and Technology Halls of Fame. Her areas of research include visual perception and decision making in sport as well as the management of sport.

Sami Kokko

Sami Kokko, PhD, is currently working as a senior researcher at the University of Jyväskylä, Finland. He has worked at the University of Jyväskylä since 2003. His main expertise is in the area of health promotion and youth sports club activities, on which topic he also did his doctoral thesis entitled 'Health Promoting Sport Club'. Sami has also recently been a coordinator of an EU Sport Unit-funded project called 'Sports Club for Health', which aimed to promote health-enhancing physical activity within sports club settings (mainly for adults). The association between physical activity / sports and health (comprehensively) is also one main interest of his. At present Sami Kokko is a member of a Global working group on healthy setting by IUHPE (International Union for Health Promotion and Education), as well as a member of the Nordic Health Promotion Research Network. In the future Sami Kokko will be concentrating on widening the research around the health promoting sports club concept. Some European networking has already been constructed, so global work will be one of his main interests.

Michael Kolb

Michael Kolb studied Physical Education and German Literature at the University of Karlsruhe. After two years of teaching at a high school, he worked at the Department for Pedagogy at the German Sport University at Cologne, where he completed his PhD. From 1992 until 2000 he was Junior Researcher at the Department of Sport Science at the University of Kiel. His habilitation (postdoctoral lecture qualification) focused on Sport Gerontology. Since 2000 he has been professor and Head of the Department for Sport Pedagogy at the Institute of Sport Science at the University of Vienna. His main fields of research are physical activities for elderly, health promotion through physical activity and the didactics of play and sport games. He is a member of the German Society of Sport Science, the Austrian Society of Sport Science, the German Society of Educational Science, and chief editor of the *Spectrum der Sportwissenschaften*, the Journal of the Austrian Society of Sport Science.

Jackie Lauff

Jackie Lauff is a well-established sport and development professional having worked in various roles within disability sport and mainstream sport for local, national and international organisations in Australia, Fiji, Germany and China. In relation to sport for development, Jackie Lauff has previously worked with ICSSPE on two international seminars on Sport in Post-Disaster Activity in Germany. She has worked with women in three remote indigenous communities in Groote Eylandt, Australia, with people with and without disabilities in disadvantaged communities in South Africa, and also with people

with disabilities in East Timor using basketball as tool for development. Jackie Lauff has an undergraduate degree in Occupational Therapy from the University of Sydney, a Master of International and Community Development with Deakin University in Australia, and an Erasmus Mundus Master of Adapted Physical Activity from the Norwegian School of Sport Sciences. Her master's thesis focused on the Participation of Developing Countries in International Disability Sport Competition from 1991 to 2006, with a view to establishing an evidence base to guide international development for people with a disability in the developing world. Jackie is a member of the Executive Committee of the Australian Disability and Development Consortium and a co-founder and CEO of an Australian-based NGO called SportMatters that was established in 2011.

Joseph Maguire

Joseph Maguire, professor at Loughborough University, UK, completed his PhD in Sociology at the University of Leicester. He is a two-term former President of the International Sociology of Sport Association and is currently an executive board member of the International Council of Sport Science and Physical Education and Velux Visiting Professor at the University of Copenhagen. Joseph Maguire recently received two major awards: The North American Society for the Sociology of Sport (NASSS) The Distinguished Service Award (2010), and The International Sociology of Sport Association ISSA Honorary Member's Award (2011). He has published extensively in the area of sport, culture and society. Currently, his work focuses on the area of sport and social theory and sport and globalisation. His research on globalisation examines inter-civilisational relations, the Olympics and mega-events, migration, media and national identity and sport and development. Recent publications include: Maguire, J. (in press). *Reflections on Process Sociology and Sport: 'Walking the Line'*. London: Routledge; Maguire, J. (in press). *Handbook for the Social Sciences of Sport*. Champaign, IL: Human Kinetics; and Maguire, J. and Falcous, M. (2010). *Sport and Migration: Borders, Boundaries and Crossings*. London: Routledge.

Michael McDonald

Michael McDonald's main field is biomechanics – the mechanics of the human body and motion. His background is physical education/sport and exercise science, having taught at universities in Australia since 1984. In the past his research has included locomotion analysis, sport performance assessment and ergonomic evaluation. More recently his research has included evaluation of loading upon the musculoskeletal system of the lower limb and the injury mechanisms involved in the mining industry. Michael is currently working with colleagues on a number of projects around the effects of injury in mining.

Mike McNamee

Mike McNamee, PhD, is Professor of Applied Ethics at Swansea University. He is the Founding Chair of the British Philosophy of Sport Association and former President of the International Association for the Philosophy of Sport. His books include *Research Ethics in Exercise, Health and Sports Sciences* (Routledge, 2006, with S. Olivier and P. Wainwright), *Sports, Virtues and Vices* (Routledge, 2008), *Reader in Sports Ethics* (Routledge, 2010) and *Doping and Anti Doping Policy in Sport* (Routledge,

2011, edited with V. Møller). He is Editor of the journal *Sport, Ethics and Philosophy*, and he still runs and plays football and tennis.

Klaus Meinel

Klaus Meinel studied landscape architecture in Hanover, Germany, and Tours, France, graduating as 'Dipl.-Ing'. From 1995 to 1997, he was a technical staff member at the German Association of Landscape Architects (BDLA) in Bonn and Berlin, and from 1997 to 2002, he was a scientific staff member at the International Association for Sports and Leisure Facilities in Cologne. Since 2003, Klaus Meinel has been Managing Director of the IAKS. He is also Lecturer at German Sport University Cologne.

Marianne Meier

Marianne Meier is a historian and political scientist who studied in Fribourg/Switzerland, North Carolina/USA and Siena/Italy. For more than ten years she has been working in the field of Sport and Development with a special focus on gender, football and monitoring and evaluation. As project manager and researcher at the Swiss Academy for Development (SAD), she cooperated with local NGOs and conducted numerous workshops and studies around the world, but with an emphasis on Africa.

Her book *Tender Feet on Hard Leather* on female football was awarded a prize for Gender Studies at the University of Fribourg/Switzerland. Currently she is teaching and completing her PhD at the Technische Universität München (TUM) in Germany. Her thesis is on sporting role models in Sub-Saharan Africa and their potential to promote empowerment and tackle gender issues. On behalf of the TUM, she is coordinating an EU project on sport and physical activity in crisis and post-disaster intervention in cooperation with the three partners ICSSPE, the Danish Red Cross, and SAD.

Marianne Meier is an Executive Board member of IAPESGW, Advisory Council member of Women Win, Board member of Terre des Hommes Schweiz and SAD associate.

David Morley

David Morley, PhD, was the Director of a national 'Talent Development in Physical Education and Sport' project for the UK government for four years, and now acts as an applied researcher, consultant, advisor and project director for national governing bodies of sport and professional sports clubs in the area of talent development. David Morley has also developed Physical Education curriculum frameworks in Egypt and the United Kingdom, and has carried out extensive development work in the area of child-centred approaches to learning.

Tony Morris

Tony Morris, PhD, is Professor of Sport, Exercise, and Health Psychology at Victoria University in Australia. In his 33-year academic career, first in the UK and then in Australia, he has designed undergraduate and postgraduate curriculum, including the innovative Master of Sport Psychology accredited by the Australian Psychological Society (APS). As a research leader, Tony Morris has been

Director of two University research centres and Associate Dean for research in a diverse faculty. He was involved in establishing the British Association of Sports Sciences (BASS, now BASES) and was an early Honorary Secretary. He led the development of the College of Sport Psychologists in the APS and was its inaugural Chair. He had two terms on the Managing Council of the International Society of Sport Psychology and has been President of the Asian-South Pacific Association of Sport Psychology for 13 years. Tony Morris is author of 10 books, more than 50 book chapters, and over 200 peer reviewed journal and international conference proceedings articles. He has graduated 32 PhD students from countries all around the world and has worked with six postdoctoral research fellows. He collaborates in research with colleagues from many countries on a range of aspects of sport and exercise psychology. Tony was the first sport psychologist to be elected Fellow of the APS and has since received their Distinguished Achievement Award. Early in his career, he provided psychological support to racquet sports players, golfers and bowlers.

Erich Müller

Erich Müller, PhD, has been a Full Professor of Sport Science (Biomechanics – Training Theory – Kinesiology) at the University of Salzburg since 1993. From 1994 to 2011, he was Head of the Department of Sport Science and is now the Vice-Rector of the University of Salzburg. Erich Müller is the President of the World Commission of Science and Sport and a member of the World Council of Biomechanics. In the past, he was also president of the European College of Sport Science (ECSS) as well as a member and chair of many national and international sport science and sport medicine associations. He received the International Prize for Science and Research of the City of Salzburg in 2005, and the Prize for Science and Research of the City of Innsbruck in 1990.

Pekka Oja

Pekka Oja was the Scientific Director of the UKK Institute for Health Promotion Research, Tampere, Finland from 1983 to 2003. After his retirement he worked as a visiting professor at the Karolinska Institute, Stockholm, Sweden until 2008. He has served as an expert for the Finnish Government, Council of Europe, European Union, World Health Organisation, European College of Sport Science, International Council of Sport Science and Physical Education, International Olympic Committee and the European Network for the Promotion of Health-enhancing Physical Activity. He has participated in several international consensus projects evaluating the evidence on physical activity and health, as well as developing assessment tools for health-enhancing physical activity and fitness. During his retirement he has continued to be active nationally and internationally in the area of health-enhancing physical activity with a special interest in the dose-response issues of physical activity and health, in the assessment of health-related fitness, and in the environmental aspects of physical activity promotion. In 2008 he was the recipient of the Philip Noel-Baker Research Award presented by the International Council of Sport Science and Physical Education.

Karen Petry

Karen Petry, PhD, is Deputy Head of the Institute of European Sport Development and Leisure Studies at the German Sport University Cologne. She is responsible for the research activities in sport

development and leisure studies, European Sport Policy, Sport in Development (SiD), Social Work and Sport, Sport and Gender. Since 2005 she has been coordinator of the Bachelor Degree BA Sport, Outdoor Activities and Movement, and also coordinator of the Lifelong Learning Programme (LLP) of the European Union. She gives lectures on BA Sport, Outdoor Activities and Movement, MA Sport Management and MA Sport Tourism and is guest Lecturer of the University of Konstanz in the Master Programme International Studies in Sport Sciences. Karen Petry published several books and articles in the area of European Sport Policy, Leisure Sport Participation and Sport and Gender. Since 2002 she has been a board member (General Secretary) of the European Network of Sport Science, Education and Employment and from 2004 to 2007 Karen Petry coordinated the Thematic Network Project Aligning a European Higher Educational Structure In Sport Science (AEHESIS).

Gertrud Pfister

Gertrud Pfister is a full professor and her research focuses on sport and gender, leadership, Muslim women, sport engagement of the population, body cultures, body enhancement, doping and cross cultural comparisons as well as physical activity and health. She is past president of the International Society of the History of Sport (ISHPES) and of the International Society for Sport Sociology (ISSA). In addition, she is a board member of WSI and engaged in IAPESGW. Gertrud Pfister is author/editor of 17 books, author/co-author of more than 250 articles in books and peer reviewed journals and has been an invited keynote speaker at more than 30 conferences on different aspects of physical activity and health. Gertrud Pfister has been the leader of many externally funded research projects and has a large international network in the area of sport sociology and sport history. Currently, she is a member of the EU collaborative project FREE - Football Research in an Enlarged Europe.

Kari Puronaho

Kari Puronaho currently works as a Principal Lecturer at Haaga-Helia University of Applied Sciences and as an Executive Secretary in the European Association for Sport Management (EASM). He previously worked for 15 years as a senior researcher at Jyväskylä University and then as a Research and Development Director at the Sports Institute of Finland. His research areas have covered sport management, sport management education, sport financing, economics of sport, economic impact of sport, and sport marketing. He completed a PhD in Marketing in the Faculty of Economics and Finance at Jyväskylä University and an MSc degree in Sport Management in the Faculty of Sport and Health Sciences at Jyväskylä University. He has published more than 6,000 pages of articles, reports and books together with his colleagues and more than 4,000 pages as a first author. He has worked as a visiting lecturer in Sweden, Denmark, Norway, Estonia, Germany, France, Hungary, Poland, Belgium, The Netherlands, UK, Czech Republic, Cyprus, Austria, Greece, France, Italy, Spain, Portugal, Turkey, San Marino, Luxembourg and USA. Among other things he has been a book reviewer for Pearson Publishers, research article reviewer for *European Sport Management Quarterly*, a columnist in different newspapers and magazines and a chairman or a member of several scientific and organising committees of different international congresses. On a national level he is a permanent advisor of the

Finnish National Sport Program as well as a member of the Financial Advisory Board of the Finnish Football Federation.

Hartmut Sandner

Hartmut Sandner received his university degree in Scandinavian linguistics from the University of Greifswald, Germany in 1980 and his doctorate from the German University for Physical Culture and Sport (DHfK) in Leipzig in 1984. He is currently Head of the Department for Information Communication at the Institute for Applied Training Science in Leipzig and a member of the Steering Group of the International Association of Sport Information (IASI). He has published widely on sport scientific information, documentation and communication in elite sport, elite sport research and trends in international elite sport development.

Usha Selvaraju

Usha Selvaraju received her Bachelor's degree in Development Studies and Geography at the School of Oriental and African Studies (SOAS) in London. After this, she worked in New Delhi for the Global March Against Child Labour and for Defence for Children International in Geneva. In 2004, she returned to London to complete a Master's of Science degree in Violence, Conflict and Development and in 2006, she joined the Swiss Academy for Development (SAD) in Biel/Bienne, Switzerland. Since 2006, she has worked primarily in the area of Sport and Development, having various roles within the Operating Team of The International Platform on Sport and Development (www.sportanddev.org), the leading information portal and online community for the Sport-for-Development sector. She also completed a number of external evaluation and research projects in this sector and held responsibilities in the areas of project management, commissioning, finance and training.

Berit Skirstad

Berit Skirstad is Associate Professor at Norwegian School of Sport Sciences, where she established the study of Sport Management in 1987. She was President of European Sport Management Association (EASM) from 2005 to 2009, and is member of the Editorial Board of European Sport Management Quarterly (ESMQ), and of the Aligning a European Higher Education Structure in Sport Sciences (AEHESIS) group in sport management (EU-funded).

Ian Stewart

Ian Stewart's doctoral degree was conferred from the University of British Columbia, Vancouver, Canada, in May 2002, where he was twice an Academic All-Canadian. He was appointed as a lecturer to the School of Human Movement Studies, Queensland University of Technology in 2002 and subsequently promoted to Senior Lecturer in 2008. An accredited exercise physiologist and certified strength and conditioning specialist, Ian Stewart holds professional membership of the American College of Sports Medicine, Sports Medicine Australia, and Exercise and Sport Science Australia. He has published two invited book chapters and 32 referred journal articles.

Steve Stovitz

Steve Stovitz, PhD, is a clinician and researcher trained in both family and sports medicine. He is an Associate Professor at the University of Minnesota in the Department of Family Medicine and Community Health. He is a Team Physician for the University of Minnesota's Athletic Department, and the Associate Director of their fellowship in Primary Care Sports Medicine. Steve Stovitz's research has focused on the issue of obesity, especially in children, and on the health benefits of exercise. He is a Senior Editor at the *British Journal of Sports Medicine* and a member of the American College of Sports Medicine's Exercise is Medicine Education Committee.

Lauri Tarasti

Lauri Tarasti has a wide experience in international affairs. During his period as Secretary General of the Ministry of the Environment in Finland 1983-1994, for several years he acted as Chairman of the Executive Body of the ECE Convention on Long Range Air Pollution and as Vice-President of the United Nations Basel Convention on the Control of the Transboundary Movements of the Hazardous Wastes and Their Disposal. In 1994 Lauri Tarasti was nominated Justice at the Supreme Administrative Court of Finland. He retired from this post in 2006 but has continued actively as Legal Counsel of the Ministry of Justice and in international sport affairs. He is today a member of the IOC Sport and Law Commission, and the member of the Scientific Committee of the ICSEMIS 2012 Convention. He is one of the leading juridical doping experts in the world. He acted as the first chairman of the international sport tribunal, the Arbitration Panel of the IAAF from 1985 to 1997. His book *Legal Solutions in International Doping Cases* was published in Milan in 2000. Lauri Tarasti was President of the Finnish Society of Sport Sciences from 1987 to 1991. He has published five juridical books with 14 editions and more than 130 articles, writing in international and national scientific periodicals and magazines.

Peter Taylor

Peter Taylor is Professor of Sport Economics at Sheffield Hallam University, UK, and Co-director of the Sport Industry Research Centre. Peter Taylor is the general editor of *Managing Leisure: An International Journal*. He is co-author of *Economics of Sport and Recreation*, with Chris Gratton, and is Technical Consultant to Sport England's *National Benchmarking Service for Sports and Leisure Centres*.

Gershon Tenenbaum

Gershon Tenenbaum, PhD, a graduate of Tel-Aviv University and the University of Chicago in Research Methodology and Statistics, is the Benjamin S. Bloom Professor of Educational Psychology at Florida State University, USA. He is a former Director of the Ribstein Center for Research and Sport Medicine at the Wingate Institute in Israel, and coordinator of the Graduate Program in Sport Psychology at the University of Southern Queensland in Australia. From 1997-2001 he was the President of the International Society of Sport Psychology, and since 1996-2008 served as the Editor of the *International Journal of Sport and Exercise Psychology*. He published extensively in psychology and

sport psychology in areas of expertise and decision-making, psychometrics, coping with physical effort experiences, and recently the linkage of emotions-cognitions-motor systems. Gershon Tenenbaum has received several distinguished awards for his academic and scientific achievements, and is a member and a fellow of several scientific and professional forums and societies.

Gerhard Trosien

Gerhard Trosien studied Sociology and Sports Sciences at Johann-Wolfgang-Goethe-University in Frankfurt, Germany from 1972-1978, and received his doctorate from the same university in 1986. From 1979 to 1980, he managed a Sports Development Aid Project in Nigeria. From 1980 to 2001 he was a Sports Administrator for the Sports Science and Sport Education department of the German Sports Confederation in Frankfurt, Germany. Within this period he was the leading manager of the German Fair-Play-Initiative (1989-1993). From 2001 until today, Gerhard Trosien has been Professor for Sport Management in the Faculty for Business Administration at the SRH University of Applied Sciences in Heidelberg, Germany. He was founding member of the Association of the Working Group for Sports Economics, of the Association of the Heidelberg Sports Economics, and of the Association for the Sports-Region of the Metropol-Region Rhine-Neckar. He is the author of many books, articles, and presentations about sports management in German and English.

Peter Van de Vliet

Peter Van de Vliet is Medical and Scientific Director of the International Paralympic Committee (IPC), based in Bonn, Germany. His portfolio includes classification, anti-doping, medical services, sports sciences and equipment, and the IPC Academy. Peter Van de Vliet, a Belgian citizen, holds a PhD in Physiotherapy and Motor Rehabilitation from the Katholieke Universiteit Leuven, Belgium, on the theme of Exercise in Clinical Depression. Prior to taking the position in the IPC, he was Commercial Agent in Mobility Devices for Persons with a Disability, and later worked as researcher at Leuven University with particular interest in Paralympic classification and psychosocial determinants of sports-participation in athletes with a disability. Peter Van de Vliet is currently member of the International Council of Sport Science and Physical Education (ICSSPE) Executive Board and coopted member of the International Federation for Sports Medicine (FIMS) Executive Committee. He is member of the Editorial Board of the *European Journal of Adapted Physical Activity* and *Sports Technology*, and occasional reviewer for several peer-reviewed journals. He was member of the Belgian Paralympic Team for Atlanta 2006 (Athletics Coach) and Athens 2004 (Wheelchair Rugby Team Manager), and a member of the Belgian Paralympic Committee Elite Athlete Sport Counselling Group.

Mark Wertheim

Mark Wertheim, PhD, has been Head of the Centres of Coaching Science and Coordination in Israel since 2005. He studied at the German Sport University, Cologne. He is responsible for modelling coaching science and the practical application for all level of competitions in modern coaching education.

Since 1995 he has taught in universities, sports unions, teacher and coach educations, training and coaching science, coaching children, coordination training, and planning training. He gives lectures on UEFA courses for football coaches. The Coordination Center educates coaches, spreading up-to-date knowledge to a variety of populations (including children, doctors, physiotherapists, occupation therapists, etc.) through lectures and continuing education programmes, coordination training for athletes, and treatments for children with coordination problems. He has published several books and articles in the area of training and coaching science, and developing coordination. Mark Wertheim is a board Member of the German Journal for Sport *Leistungssport* and of the *International Journal of Coaching Science*.

Margaret Whitehead

Margaret Whitehead, PhD, is a Visiting Professor at the University of Bedfordshire and a Physical Education Consultant. She was trained as a PE teacher and spent most of her career as a teacher trainer, specialising in pedagogy. Her research area is Physical Literacy, a concept based on existential and phenomenological philosophy. She has written and presented widely on this topic.

Eli A. Wolff

Eli A. Wolff is the programme director of the Sport and Development Project at Brown University, which aims to advance the growing field of sport and social change. The project works with academic and community partners to better understand how sport can be utilised to improve the human condition on a local and global scale. Eli also serves as the director of the Inclusive Sports Initiative at the Institute for Human Centered Design.

Part II.
Fundamental Academic Disciplines
of Sport Science

Fundamental Sport Sciences form the nucleus of Sport Science. On the one hand, all sport science disciplines are characteristically applied sciences having their own parent sciences in the background. On the other hand, each discipline has formed strong substance and academic structures with its own sub-disciplines as well as unique research methodology, still having sports and physical activity as its common determinant. Part II includes eight scientific disciplines as fundamental sport sciences.

SPORT BIOMECHANICS

Erich Müller, Thomas Stöggl, Tony Parker and Michael McDonald

1. General Information

1.1. Historical Development

Not applicable.

1.2. Function

Biomechanics involves research and analysis of the mechanisms of living organisms. This can be conducted on multiple levels and represents a continuum from the molecular, wherein biomaterials such as collagen and elastin are considered, to the tissue, organ and whole body level. Some simple applications of Newtonian mechanics can supply correct approximations on each level, but precise details demand the use of continuum mechanics. Sport biomechanics uses the scientific methods of mechanics to study the effects of forces on the sports performer and considers aspects of the behaviour of sports implements, equipment, footwear and surfaces. There are two main aims of sport biomechanics, that is, the reduction of injury and the improvement of performance (Bartlett, 1999).

Aristotle (384-322 BC) wrote the first book on biomechanics, *De Motu Animalium*, translated as *On the Movement of Animals*. He saw animals' bodies as mechanical systems, but also pursued questions that might explain the physiological difference between imagining the performance of an action and actually doing it. Some simple examples of biomechanics research include the investigation of the forces that act on limbs, the aerodynamics of animals in flight, the hydrodynamics of objects moving through water and locomotion in general across all forms of life, from individual cells to whole organisms.

Although the human body is an extremely complex biological system composed of trillions of cells, it is subject to the same fundamental laws of mechanics that govern simple metal or plastic structures.

The essence of biomechanics is therefore a synthesis of biology and mechanics that seeks to understand and explain movement, particularly human movement. Biomechanics is often referred to as the link between structure and function.

1.3. Body of Knowledge

Although biomechanics is relatively young as a recognised field of scientific inquiry, biomechanical considerations are of interest to several different scientific disciplines and professional fields. As such, biomechanists may have academic backgrounds in areas such as zoology, orthopaedics, cardiology, sports medicine, other sport sciences and biomedical engineering, with the commonality being an interest in the biomechanical aspects of the structure and function of living organisms.

This diversity of scientific and professional background is reflected in the broad range of topics investigated by biomechanists, within the general theme of analysing the motion of a living organism and the effect of forces on it. The biomechanical approach to movement analysis can be qualitative, with movement observed and described, or quantitative, meaning that some aspect of the movement will be measured. There are many areas of biomechanics and biomechanical research and these have been categorised into developmental; occupational; clinical; and exercise and sport biomechanics research domains (Housh, Housh and Johnson, 2003).

Developmental biomechanics focuses on the evaluation of fundamental movement patterns during performance of gross and fine motor skills. This contributes to understanding of motor skill development typically associated with movement patterns such as walking, running, jumping, gliding and rolling, throwing and catching for individuals of different ages. It has resulted in the description of a typical pattern of movement for a specific activity, categorised according to age. The data gathered may be used as a reference by developmental biomechanists, to determine the level of movement ability and allow comparisons to be made across ages. The information may also be used to facilitate any remediation strategies (Hutchinson and Wynn, 2004).

Occupational biomechanics focuses on providing a safe and efficient working environment, both indoors and outdoors. For example, this may include the development of better safety equipment such as helmets, shin guards and footwear to protect workers from any work related hazards that can cause injury and even death (Thuresson, Änga, Linderc and Harms-Ringdahl, 2005). The development of safe and biomechanically efficient behaviour and appropriate distribution of workload is important in minimising the risk of overuse injuries of both upper and lower limbs. Optimising the match between the worker and his/her tools or equipment is also an area in which the occupational biomechanist may contribute to the ergonomics team in the workplace setting.

The purpose of clinical biomechanics is to observe and analyse the movement patterns of individuals who are either injured, disabled or both and to contribute to the provision of appropriate interventions that will enable the injured or disabled person to regain normal function (Willems, Witvrouw, Delbaere, De Cock and De Clercq, 2005). Through rehabilitative biomechanical research, exercise equipment and supplementary aids such as canes, crutches and walkers and substitution devices such as prostheses and wheelchairs can be developed and used for rehabilitation purposes (Yakimovich, Lemaire and Kofman, 2006).

Exercise and sport biomechanists apply their knowledge to the analysis and enhancement of sports performance and the development of strategies to reduce the risk of sports related injury. This extends to the development and use of various devices and exercise equipment to improve fitness components such as strength, endurance, flexibility and speed. Considerable research effort has also been applied to the development and improvement of athletic equipment, clothing and footwear, designed to enable the athlete to cope with the specific demands of particular sports and ultimately to reduce the risk of injury without detriment to performance.

As the field of biomechanics continues to evolve, new areas of engagement arise and opportunities for collaboration with other disciplines continue to increase. The areas of computer modelling and movement simulation techniques, robotics and the developments in sensor technology and 'smart' materials are examples of the many emerging areas within the field.

1.4. Methodology

Qualitative, quantitative and predictive biomechanical analysis methods are three approaches most commonly used in biomechanics.

Qualitative biomechanical analysis techniques involve systematic observation and introspective judgement of the quality of human movement and this approach is often used to inform the most appropriate intervention to improve performance (Knudson and Morrison, 2002). Observation models such as phase analysis and temporal analysis models, as well as the critical feature analysis model, form the basis for this type of analysis.

The use of commercially available video software enables video recordings to be compared against a standard of performance by means of split screen viewing, making this model an extensive but successful and economical approach.

A major deficiency with qualitative approaches relates mainly to the lack of agreement amongst biomechanists in ascertaining a standard description and in identifying an adequate number of identifiable principles.

Advancements in technological capabilities have resulted in the ability to record, display and evaluate dynamic movements, both kinematically and kinetically, in real time. Methods used for quantitative biomechanical analysis are similar to the qualitative methods in terms of approach, but without their subjectivity as they use a range of data collection instruments to capture, observe and evaluate performance. The essential component in using quantitative analysis methods is the selection of key variables.

Depending on the particular application, both qualitative and quantitative analysis techniques rely on observation or recorded data from real movement that provides information on the characteristics of the movement being analysed. In contrast, predictive biomechanical analysis methodology uses simulation models of the human anatomical structure to mathematically calculate and predict an ideal performance, thus allowing hypothetical questions to be investigated systematically.

Predictive analysis methods can be applied to most movements, provided there are advanced computer simulation programs to fit the nature of that particular movement.

1.5. Relationship to Practice

There are numerous examples within the scientific literature of research concerned with the application of biomechanics to practical situations across the broad range of professional areas identified earlier. While it is not possible to provide a comprehensive account here, readers are referred to the various literature sources identified later for more detailed information.

As the proportion of elderly people within the population increases, an applied area that presents significant challenge to the biomechanist is the study of mobility impairment in the elderly. Age related decrements in muscle strength, dynamic postural stability and movement speed and accuracy are associated with the relatively high incidence of falls and hip fracture in the elderly. Biomechanists are working with other specialists to investigate the mechanisms associated with falls and the biomechanical risk factors for injury in this population. Applied research into the value of protective equipment and safe environments is also contributing to the development of a range of injury prevention strategies (Gapeyeva, Sander, Erelina and Paasuke, 2006)

Research into the field of occupational biomechanics has included identification of risk factors for musculoskeletal injury and the effect of mechanical loading on joint structures. New sensor technologies are being used to quantify risk factors and there is increasing recognition of the physical and psycho-social determinants of musculoskeletal injury and low back pain (Splittstoesser et al., 2007).

Biomechanists' contribution to sports medicine research has also been extensive in the area of mechanisms of injury and in the development and evaluation of protective equipment such as knee and ankle braces. In the field of sport biomechanics research is mainly attributed towards injury prevention and improvement in performance. Kinematics, kinetics, anthropometrics, electromyography and modelling is applied to describe sport techniques, determine performance predicting factors, analyse and develop sports equipment, measure and compute joint loadings, etc.

1.6. Future Perspectives

Not applicable.

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2. Organisational Network

2.1. Major International Organisations and Networks

The International Society of Biomechanics (ISB) was founded in 1973 to promote the study of all areas of biomechanics at the international level, although special emphasis is given to the biomechanics of Human Movement. ISB encourages international contact amongst scientists, promotes the dissemination of knowledge and forms liaisons with national organisations. The ISB's membership includes scientists from a variety of disciplines including anatomy, physiology, engineering (mechanical, industrial aerospace, etc.), orthopaedics, rehabilitation medicine, sport science and medicine, ergonomics and electro-physiological kinesiology. ISB activities include the organisation of biennial international conferences, publication of congress proceedings and a biomechanics monograph series. Newsletters are distributed quarterly and the Society sponsors scientific meetings

related to biomechanics. It is also affiliated with the *Journal of Biomechanics*, the *Journal of Applied Biomechanics*, *Clinical Biomechanics*, the *Journal of Electromyography and Kinesiology* and *Gait and Posture*. The ISB also supports technical and working groups for the purpose of advancing knowledge in specialised areas within the field of biomechanics. Currently, active technical sections include computer simulation, shoulder biomechanics, footwear biomechanics and 3-D motion analysis.

The World Commission of Science and Sports (WCSS) was established in 1967 and is a working group of the International Council for Sports Science and Physical Education (ICSSPE). The WCSS covers a range of sports, which currently are Cricket, Football, Golf, Swimming, Shooting Sports, Racket Sports and Winter Sports. Details of each are found under the relevant web page (see section 3.6 Internet Sources). In general, each sport area holds its own scientific congress and ensures that the proceedings are published and available to the international community. The WCSS has a formal link with the *Journal of Sports Sciences* in which abstracts from each congress are published. The WCSS has held International Symposia since the inaugural meeting in 1970 in Brussels.

The International Society of Biomechanics in Sports (ISBS) is composed of members from all over the world with a common desire to study and understand human movement, especially as it relates to applied sport biomechanics. Participants come from a wide range of backgrounds including exercise science, education, engineering, computer science, rehabilitation and medicine to name a few. The first full scale conference of the ISBS was held 20-25 June, 1982, in San Diego, California, with 123 participants. ISBS adopted a constitution on May 7, 1983, with subsequent constitutional revisions over time to suit the changing needs of the ISBS. Some of the first field-based research activities of ISBS were at the 1976 Olympic Games and 1978 Commonwealth Games, with numerous other research projects completed since that time.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Europe

The European Society of Biomechanics (ESB) was founded at a meeting of 20 scientists from 11 countries in Brussels in 1976. Biomechanics was defined as 'the study of forces acting on and generated within a body and of the effects of these forces on the tissues, fluids or materials used for diagnosis, treatment or research purposes'. The primary goal of the ESB is 'to encourage, foster, promote and develop research, progress and information concerning the science of Biomechanics'. The first scientific meeting and General Assembly of the membership was held in Brussels in 1978 and regular meetings have occurred since this time.

North America

The Canadian Society of Biomechanics (CSB/SCB) was formed in 1973. The purpose of CSB/SCB is to foster research and the interchange of information on the biomechanics of human physical activity. The main activity of the CSB/SCB is the organisation of a biannual Scientific Conference held in the

years opposite to those of the International Society of Biomechanics. A newsletter is published periodically and is now in web format. CSB/SCB is affiliated with the International Society of Biomechanics (ISB).

The American Society of Biomechanics (ASB) was founded in October, 1977 with the aim of providing a forum for the exchange of information and ideas amongst researchers in biomechanics. The term biomechanics is defined by the ASB as the study of the structure and function of biological systems using the methods of mechanics. The mission of the ASB is to encourage and foster the exchange of information and ideas amongst biomechanists working in different disciplines and fields of application. These include the biological sciences, exercise and sport science, health sciences, ergonomics and human factors as well as engineering and applied science. There are several regional and national associations affiliated with the ASB including the American College of Sports Medicine, the American Society of Mechanical Engineers and the Orthopaedic Research Society.

Australia/New Zealand

The Australia New Zealand Society of Biomechanics (ANZSB) was founded in 1996 as a forum for biomechanists in Australia and New Zealand to communicate and present their research. The ANZSB acknowledges and encourages a diverse range of disciplines amongst its members. Many sub-areas with social support (i.e., youth and elite sports, exercise programmes) in biomechanics have evolved within the organisation including, for example, cardiovascular and respiratory biomechanics, rehabilitation biomechanics, sport biomechanics, bone and hard tissue biomechanics, connective tissue biomechanics, orthopaedic biomechanics and cellular and molecular biomechanics.

ANZSB aims to provide a forum for all areas of biomechanics to exchange ideas and experiences within the Oceania region. The First Australasian Biomechanics Conference was held in Sydney, Australia, in February, 1996.

There are numerous national associations/societies of biomechanics including those listed below, which are affiliated with the ISB:

- Brazilian Society of Biomechanics
- British Association of Sport and Exercise Sciences
- Bulgarian Society of Biomechanics
- Chinese Society of Sports Biomechanics
- Comisia de Biomecanica Inginerie si Informatica (Romania)
- Czech Society of Biomechanics
- Japanese Society of Biomechanics
- Korean Society of Sport Biomechanics
- Polish Society of Biomechanics
- Russian Society of Biomechanics
- Societ de Biom' Canique (France).

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

The following journals contain articles related to various aspects of biomechanical investigation:

- *Clinical Biomechanics* (United Kingdom)
- *Bone* (New York, USA)
- *Computer Methods and Programs in Biomedicine* (Amsterdam)
- *Electroencephalography and Clinical Neurophysiology* (Limerick)
- *Gait and Posture* (Oxford)
- *Injury* (Holland)
- *Journal of Applied Biomechanics* (Illinois)
- *Journal of Back and Musculo-skeletal Rehabilitation* (Holland)
- *Journal of Biomechanical Engineering* (New York)
- *Journal of Biomechanics* (New York)
- *Journal of Electromyography and Kinesiology* (Holland)
- *Journal of Human Movement Studies* (London)
- *Journal of Sport Sciences* (London/New York)
- *Medicine and Science in Sports and Exercise* (United States)
- *Scandinavian Journal of Medicine and Science in Sports* (Denmark)
- *Sports Biomechanics* (USA)
- *Sports Engineering* (Germany)
- *Sports Technology*.

3.2. Reference Books, Encyclopaedias

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3.3. Book Series

The American College of Sports Medicine publishes Exercise and Sports Sciences Reviews annually, which review current research concerning biomechanics (and other topics) in exercise science. Online information related to the reviews can be obtained from the College's website listed in section 3.6 Internet Sources.

3.4. Conference/Workshop Proceedings

Various international and national societies of biomechanics hold either annual or biennial conferences during which workshops are held by special interest groups within the respective society (refer to the International Society of Biomechanics website in section 3.6 Internet Sources). Certain societies now publish the proceedings from these workshops on their home pages on the internet.

3.5. Data Banks

Data banks for communal use by other biomechanists outside the laboratory or institution gathering the data is uncommon, due mainly to non-compatible equipment, variations in testing protocols and experimental set up. Nevertheless, there are a few websites that contain data banks accessible to

biomechanists. These include the International Society of Biomechanics site for movement data, pressure data, musculo-skeletal models and 3-D imaging data and the Clinical Gait Analysis website for limited data sets on gait analysis for various patient populations (see section 3.6 Internet Sources).

3.6. Internet Sources

The following internet sources are available for use in relation to various aspects of biomechanics:

- American College of Sports Medicine – www.acsm.org
- American Society of Biomechanics (ASB) – www.asbweb.org/
- Australia New Zealand Society of Biomechanics – www.anzsb.asn.au/
- Canadian Society of Biomechanics (CSB/SCB) – www.health.uottawa.ca/biomech/csb/
- Clinical Gait Analysis – www.clinicalgaitanalysis.com/
- European Society of Biomechanics (ESB) – www.esbiomech.org
- International Society of Biomechanics (ISB) – <http://isbweb.org/>
- International Society of Biomechanics in Sports (ISBS) – www.isbs.org/

4. Appendix Material

4.1. Terminology

The terminology used in biomechanics draws from the disciplines of human anatomy, physiology, pathology, physics, mathematics, engineering, rehabilitation and general medical practice.

4.2. Position Statements

Position statements on topics of current and vital interest can be found on the website of the American College of Sports Medicine at www.acsm.org

SPORT AND EXERCISE MEDICINE

Steve Stovitz, Adrian Hutber, Ellen Burton and David A. Parker

1. General Information

1.1. Historical Development

The recognition that physical activity reaps health benefits can be traced back thousands of years. Hippocrates (460 B.C. – 377 B.C.) said, 'walking is man's best medicine.' Other glimpses of modern sports medicine emerged in the 2nd century AD, when the first 'team doctor' was appointed to the gladiators. In the 5th century, care of athletes was largely the responsibility of coaches. More formal recognition and controlled study of the science of sports medicine did not occur until the first half of the 20th century. In 1912, the German National Sports Medicine organisation was established as the first sports medicine association in the world. In 1928, a committee was formed to plan the First International Congress of Sports Medicine. As a result, the Association Internationale Medico-Sportive (AIMS) was formed, which subsequently changed its name to the Federation Internationale Medecine Sportive (FIMS). FIMS exists today as the main international sports medicine association and is discussed in more detail in section 2.1. *Major International Organisations and Networks*.

In 1958, the Institute for Cardiology and Sports Medicine offered the first modern definition of sports medicine as including 'those theoretical and practical branches of medicine which investigate the influence of exercise, training, and sport on healthy and ill people, as well as the effects of lack of exercise, to produce useful results for prevention, therapy, rehabilitation, and the athlete'. The main aspects of sports medicine were described as:

1. Medical treatment of injuries and illnesses
2. Medical examination before starting a sport to detect any damage, which could be worsened by the sport
3. Medical performance investigation to assess the performance capacity of heart, circulation, respiration, metabolism and the skeletal musculature
4. Performance diagnosis specific to the type of sport
5. Medical advice on lifestyle and nutrition
6. Medical assistance in developing optimal training methods
7. Scientifically based control of training.

1.2. Function

The current field of sports medicine fulfills a broad range of health-care needs. From a traditional subspecialty of allopathic medicine to a community based specialty promoting safe physical activity for all. Sports medicine clinicians diagnose and treat injuries in medical clinics and also are leaders in the prevention of injuries and the enhancement of the public's health.

Training in sports medicine is geared to diagnose and treat problems that inhibit full range of motion of the body and full exercise and sporting capabilities. Given that most of these problems are musculoskeletal, sports medicine has often been viewed as synonymous with orthopaedics. However, problems such as asthma, anaemia, concussion, depression and overtraining are non-orthopaedic issues that also prohibit a person from realising his or her full exercise capability. Sports medicine has evolved whereby clinicians from a broad spectrum of clinical fields contribute to the field. These clinical fields include:

- Orthopaedic sports surgeons
- Orthopaedic surgeons with a special focus on arthroscopic surgical techniques, especially involving the shoulder and knee
- Primary care sports medicine physicians
- From Family Medicine, Paediatrics or Internal Medicine
- Physicians in other non-surgical fields, e.g. Psychiatrists, Emergency Room physicians
- Sports psychologists for issues ranging from improving game performance to the treatment of depression, anxiety or substance abuse in athletes
- Athletic trainers – often the person most involved in the day-to-day clinical management of athletes
- Physical therapists – especially for the prevention and rehabilitation of musculoskeletal injuries
- Exercise physiologists
- Strength coaches
- Chiropractors.

As described in section 1.5. *Relationship to Practice*, clinicians in sport medicine may see patients in regular or sport medicine specific medical clinics. In addition, sport medicine clinicians provide direct medical coverage during community based athletic events such as games and endurance events.

With the nearly worldwide epidemic of obesity and diseases attributable to sedentary lifestyles, clinicians in sport medicine have taken a major role in the promotion of physical activity. As described in section 1.6 Future Perspectives, this is perhaps best seen in the global initiative started by the American College of Sports Medicine (ACSM) entitled 'Exercise is Medicine'.

1.3. Body of Knowledge

Similar to other fields of medicine, information pertaining to the field of sport medicine can be found in journals, books and websites. The most trustworthy sources for original research are peer-reviewed journals. Review articles and book chapters, such as those from books listed in sections 3.2. *Reference Books, Encyclopaedias, etc.* and 3.3. *Book Series*, will summarise information from original peer reviewed research so that practitioners can best diagnose and treat patients in the sport medicine setting.

1.4. Methodology

Until the 1990s, sport medicine research consisted of a preponderance of case-studies and case-series reports. Documenting a case or series of cases can provide the basis for studies using higher quality methods. However, conclusions based upon case reports may be invalid due to a variety of reasons. Sport medicine journals are now reporting high-quality studies of randomised controlled clinical trials and large prospective cohorts. In addition, many systematic summaries of information on particular sport medicine topics are now reported through either meta-analyses or systematic reviews.

1.5. Relationship to Practice

Sport medicine clinicians practice in a variety of settings. Among physicians, those in orthopaedic surgery who specialise in sport medicine may work within general orthopaedic offices. Similarly, primary care physicians may work within general primary care clinical settings and serve as the in-house specialist for sport medicine related issues.

Alternatively, in many parts of the world, there are an increasing number of 'sport medicine clinics' whereby specialists in sport medicine provide care but are trained in a variety of clinical areas (e.g. orthopaedic surgeons, family physicians and physical therapists) work together within a single clinic.

For sports team coverage, there is a tremendous range of medical services provided. From the lowest intensity to the highest, some of the most common are as follows:

No formal medical coverage

- Team coaches give advice
- Still common in many parts of the world, even at elite levels.

Low intensity medical coverage

- An athletic trainer or other emergency medical personnel present at games
- There may be a sport medicine physician 'on-call'

Moderate intensity medical coverage

- An athletic trainer and a dedicated physician present at games.

Higher intensity medical coverage

- An athletic trainer present at practices and games
- A dedicated sport medicine physician present at games and available during non-game hours.

Highest intensity medical coverage (e.g. within athletic departments at large Universities or high-level professional sports teams)

- An athletic trainer present at practices and games
- A physical therapist available for rehabilitation
- Several dedicated physicians present at games and on-call for non-game times
- These physicians come from different primary medical backgrounds. Some of the physicians will have specialty training in sport medicine, but others may not. For example, some physicians whose primary training provides unmet needs for high-level athlete care (e.g. Cardiology, Neurosurgery, Dentistry) may also provide regular service to a sports team.

One or two of the sport medicine physicians with the assistance of the athletic trainer serve as primary coordinator for any further sub-specialty care.

The qualifications recommended for a sports 'team physician' as described by six major United States medical organisations (American Academy of Family Physicians, American Academy of Orthopaedic Surgeons, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, and the American Osteopathic Academy of Sports Medicine) can be found at: <http://www.amssm.org/MemberFiles/TPCStatement.pdf>

1.6. Future Perspectives

The field of sport medicine has traditionally focused on athletic performance, supporting the athlete in pursuit of peak physical conditioning. More recently, this scope of practice has expanded to include working with more recreational athletes to obtain levels of fitness that, while physically challenging, would not be considered top athletic performance. With current trends in sport medicine and global health, the field of sport medicine is poised for another expansion of scope, with sport medicine physicians taking an important role in the health and wellness of the general population.

One of the main drivers behind this expansion is the global increase of non-communicable diseases (NCDs) and the health and economic burdens that this is beginning to impose on society. With the rise of sedentary lifestyles, NCDs that used to affect primarily developed nations have become a global health care issue. In 2008, 36 million people died from NCDs, representing 63 per cent of the 57 million global deaths that year (United Nations, 2011). Policy makers at federal, state and local levels are also becoming increasingly aware of the need to control and decrease burgeoning health care costs. In a report released in September, 2011 the World Economic Forum estimates that by 2030,

NCDs will cost US\$47 trillion (Bloom et al., 2011). By utilising physical activity, a relatively low cost means to prevent and treat NCDs, sport medicine physicians play an important role in controlling rising global health care costs.

In addition, sport medicine physicians are seeing an opportunity to expand their scope of practice and business by using physical activity as an intervention to prevent and treat chronic disease. This gives the sport medicine physician the opportunity to expand their practice while addressing one of today's biggest health care issues and to also play an integral role in decreasing health care costs.

To better understand the connection between sport medicine physicians and the NCD 'epidemic', it is important to understand the impact of NCDs on global health and the role that physical activity plays in the prevention and treatment of NCDs. According to the World Health Organization's most recent Global Health Risks data (2009) after high blood pressure, tobacco use and high blood glucose, physical inactivity constitutes the fourth leading cause of death globally, with about 3.3 million attributable deaths per year (World Health Organization, 2011). Research based on directly measuring fitness levels rather than survey data suggests that the WHO report might be underestimating the role that physical inactivity plays and that it is actually the leading cause of death in the United States (Blair, 2009).

While physical inactivity is a risk factor itself, it also is a contributor to many other risk factors including hypertension, high blood glucose and obesity/overweight. Regular physical activity can be used to prevent or treat all of these conditions.

Many international organisations recognise the growing burden of NCDs and physical activity and sport medicine's role in alleviating this burden. Several organisations have produced international documents calling for action in this area. The World Health Organization was one of the first with the *Global Strategy on Diet, Physical Activity and Health*, published in 2004. The *Toronto Charter for Physical Activity: A Global Call for Action* and the *Exercise is Medicine® Global Health Care Declaration* built on the *Global Strategy*, calling for all countries to make physical activity a priority and to connect physical activity with health care.

One of the best examples of utilising the strengths and knowledge of the sport medicine physician to make physical activity an integral part of health care is *Exercise is Medicine* (EIM), a multi-organisational initiative co-launched by the American Medical Association and the American College of Sports Medicine (ACSM) and subsequently coordinated by ACSM. An initial survey found that 60 per cent of patients would be more likely to start a physical activity routine if it was suggested by their health care provider but fewer than 50 per cent of health care providers talk about physical activity on a regular basis (ACSM, 2009). With the clear evidence of the benefits of physical activity, EIM works with health care providers to make physical activity a vital sign that is addressed at every patient interaction. Work by the Karolinska Institute in Sweden (Kallings et al., 2008; Kallings et al., 2009) and the Green Prescription movement in New Zealand (Elley et al., 2003) show that advice from a health care provider is the first step, but that sustained behaviour change requires community based

support. EIM focuses on making physical activity an integral part of routine health care, with a physical activity assessment, prescription and referral as the outcome of every patient/health care provider (HCP) interaction. More information on this initiative can be found at <http://exerciseismedicine.org/>

The shifting focus of health care to include physical activity as an integral part opens new and exciting opportunities for sport medicine physicians. As a specialty with a focus on physical activity for performance, fitness, and now health, sport medicine physicians will likely find themselves increasingly in demand by both colleagues and the public. It is hoped that patients wanting less expensive, more encompassing means of preventing and treating some of their greatest health risks will look to health care providers to integrate physical activity into their health care routine. Health care providers without the knowledge or comfort level with meeting this need will increasingly turn to sport medicine colleagues to help fill this gap and address a growing global health issue.

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2. Organisational Network

2.1. Major International Organisations and Networks

International Federation of Sports Medicine

www.fims.org

The International Federation of Sports Medicine / Fédération Internationale de Médecine du Sport (FIMS) is comprised of continental and national sport medicine associations, as well as multinational groups and individual members. FIMS is dedicated to promoting the study and development of sport medicine throughout the world.

IOC Medical Commission

<http://www.olympic.org/medical-commission>

The IOC Medical Commission was created to manage the problem of doping in sports. Through study in the anti-doping area, the Commission developed alternative methods to assist athletes, including sport medicine, biomechanics, exercise physiology and nutrition. Since creation of the World Anti-Doping Agency, the Commission's scope has expanded to address all of the main medical issues which may occur in sport.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Regional

Within FIMS, various continental and multinational groups exist.

Continental groups

- African Union of Sports Medicine
- Asian Federation of Sports Medicine
- European Federation of Sports Medicine Associations
- Pan American Confederation of Sports Medicine.

Union Africaine de Medecine du Sport

Contact: Prof. M Bibars

Address: 16 El-Mamoon St, Madinet El-Sahafien, Cairo, Egypt

Tel: 20 2 347 4419

Fax: 20 2 454 1617 or 340 7031

Email: uams@thewayout.net

Asian Federation of Sports Medicine (AFSM)

President: Dr Wahid Al Kharusi

Address: AFSM Secretariat Office, F/6, Sports Medicine Federation of Iran, Varzaneh St. Mofatteh Ave.

P.O. Box: 15175-378 Tehran - Iran.

Tel: +98 21 88323776-7

Fax: +98 21 888 334 98 or +98 21 88 32 3776

Email: info@afsmonline.com or wahidk@omantel.net.om

Website: www.afsmonline.com

Multinational groups

- Arab Federation of Sports Medicine
- Association of Sports Medicine of the Balkans
- Caribbean Association of Sports Medicine
- Confederación Centroamericana de Medicina del Deporte
- Confederación Sudamericana de Medicina del Deporte
- Federation Magrebine de Medecine du Sport.

Groupement Latin et Mediterranéen de Medecine du Sport

National

FIMS is comprised of more than 130 national organisations dedicated to advancing sport medicine within their respective countries. A complete list of national organisations is available at <http://www.fims.org/en/associations/national/>

Specialised Centres

Numerous centres of sport medicine, providing clinical care for athletes, are found around the world. Research centres for sport medicine, usually functioning as part of a hospital complex, are common in many major cities.

2.3. Specialised International Degree Programmes

Due to the complexities of licensing for the practice of medicine, few attempts have been made to establish international degree programmes for either undergraduate or postgraduate medical education.

3. Information Sources

3.1. Journals

English Language

- *American Journal of Sports Medicine* (USA)
- *Archives of Physical Medicine and Rehabilitation* (USA)
- *British Journal of Sports Medicine* (UK)
- *Clinics in Sports Medicine* (USA)
- *Clinical Journal of Sports Medicine* (USA)
- *Current Sports Medicine Reports* (USA)
- *European Journal of Sport Science* (UK)
- *Human Movement Science* (Holland)
- *International Journal of Sports Medicine* (Germany)
- *International SportMed Journal* (International)
- *Journal of Orthopaedic and Sports Physical Therapy* (USA)
- *Journal of Science and Medicine in Sport* (Australia)
- *Journal of Sports Sciences* (England)
- *Journal of Sports Science and Medicine* (Turkey)
- *Journal of Sport Rehabilitation* (USA)
- *Knee Surgery, Sports Traumatology, Arthroscopy* (Europe)
- *Medicine and Science in Sport and Exercise Sports Medicine* (USA)
- *Operative Techniques in Sports Medicine* (USA)
- *Physical Therapy in Sport* (UK)
- *The Journal of Sports Medicine and Physical Fitness* (Italy)
- *The Physician and Sports Medicine* (USA)
- *The Swedish Medical Journal* (Sweden)
- *Scandinavian Journal of Medicine and Science in Sports* (Denmark)
- *South African Journal of Sports Medicine* (South Africa)
- *Sports Medicine* (New Zealand)
- *Sports Medicine and Arthroscopy Review* (USA).

Non-English language

- *Annales de Réadaptation et de Médecine Physique* (France)
- *Archivos de Medicina del Deporte* (Spain)
- *Deutsche Zeitschrift für Sportmedizin* (Germany)
- *Journal de Traumatologie du Sport* (France)
- *Medicina dello Sport* (Italy)
- *Medicina del Ejercicio* (Spain)
- *Medecine du Sport* (France) (in English, French, Italian and Portuguese)
- *Österreichisches Journal für Sportsmedizin* (Austria)
- *Schweizerische Zeitschrift für Sportsmedizin / Revue Suisse de Médecine et Traumatologie du Sport* (Switzerland)
- *Sport-Orthopaedie und Traumatologie* (Germany).

3.2. Reference Books, Encyclopaedias, etc.

Sport Medicine and Training

- Bernhardt, D. T., and Roberts, W. O. (2010). *Preparticipation physical evaluation*, 4th Ed. Elk Grove Village, IL: American Academy of Pediatrics.
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- Madden, C. C., Putukian, M., Young, C. C., and McCarty, E. C. (2009). *Netter's Sports Medicine*. Philadelphia, PA: Saunders/Elsevier.
- Micheli, L., Kai-Ming, C., Smith, A., Rolf, C., Bachl, N., Frontera, W., and Alenabi T. (In press). *FIMS Team Physician Manual*. New York: Routledge/Taylor and Francis.
- O'Connor, F. G. (Ed.) (2012). *ACSM's sports medicine: a comprehensive review*. Philadelphia: Lippincott Williams and Wilkins.

Sports Injuries

- Casa, D. J. (Ed.) (2011). *Preventing Sudden Death in Sport and Physical Activity*. Sudbury, MA: Jones and Bartlett Learning.
- Norris, C. (2011). *Managing sports injuries: a guide for students and clinicians*, 4th Ed. Philadelphia, PA: Churchill Livingstone/Elsevier.
- McDonagh, D. O., Micheli, L. J., and Frontera, W. R. (2011). *FIMS sports medicine manual: event planning and emergency care*. Philadelphia, PA: Lippincott Williams and Wilkins.

Sarwark, J. and LaBella, C. (Eds.) (2010). *Pediatric Orthopaedics and Sports Injuries: A Quick Reference Guide*. Elk Grove Village, IL: American Academy of Pediatrics.

Specific Sports

Altchek, D. W., Andrews, J. Dines, J. M., ElAttrache, N. S., Wilk, K. E., and Yocum, L. A. (2011). *Sports Medicine of Baseball*. Philadelphia, PA: Lippincott Williams and Wilkins.

Rehabilitation

Buschbacher, R., Prahlow, N., and Dave, S. J. (2008). *Sports Medicine and Rehabilitation: A Sports Specific Approach*, 2nd Ed. Philadelphia: Lippincott Williams and Wilkins.

Comfort, P., and Abrahamson, E. (2010). *Sports Rehabilitation and Injury Prevention*. Hoboken, NJ: Wiley.

Nutrition

Burke, L. (2009). *Clinical sports nutrition*, 4th Ed. New York: McGraw Hill.

3.3. Book Series

The Encyclopaedia of Sports Medicine is a multi-volume IOC Medical Commission publication, in collaboration with the International Federation of Sports Medicine.

Caine, D., Harmer, P., and Schiff, M. (2009). *Epidemiology of injury in Olympic sports*. Oxford, UK: Blackwell Publishing.

Schwellnus, M. (2008). *The Olympic textbook of medicine in sport*. West Sussex, UK: Blackwell Publishing.

Handbooks

Moorman, C. T, Kirkendall, D. T., and Echemendia, R. J. (Eds) (2010). *Praeger Handbook of Sports Medicine and Athlete Health*. (3 volumes) Santa Barbara, CA: ABC-Clio/Praeger.

Olympic Handbook of Sports Medicine Series

Bahr, R., and Engebretsen, L. (2009). *Sports Injury Prevention*. West Sussex, UK: Blackwell Publishing.

Brewer, B. (2009). *Sport Psychology*. West Sussex, UK: Blackwell Publishing.

Year Book of Sports Medicine Series

Shephard, R. J. et al. (Eds.) *Year Book of Sports Medicine*. Philadelphia: Mosby-Elsevier. Annually Produced.

3.4. Congress/Workshop Proceedings

Congress proceedings are distributed by various host organisations. Frequently, abstracts of the presented papers are published in associated journals.

3.5. Data Banks

A number of information databases are useful for locating further information sources such as original research articles in scientific journals and reference articles.

AusportMed

http://www.informit.com.au/indexes_AUSPORTMED.html

PubMed

www.ncbi.nlm.nih.gov/sites/entrez

CINAHL

www.ebscohost.com/cinahl

NLM Gateway

<http://gateway.nlm.nih.gov>

ScienceDirect

www.sciencedirect.com

SPORTDiscus

<http://www.ebscohost.com/public/sportdiscus>

Web of Science

http://wokinfo.com/products_tools/multidisciplinary/webofscience/

3.6. Internet Sources

Sport medicine information for practitioners and patients is available on a variety of organisation's websites.

American Academy of Orthopaedic Surgeons

www.aaos.org

American College of Sports Medicine

www.acsm.org

American Medical Society for Sports Medicine

www.amssm.org

American Medical Athletic Association

www.amaasportsmed.org

American Orthopaedic Society for Sports Medicine

www.sportsmed.org

American Osteopathic Academy of Sports Medicine

www.aoasm.org

Asian Federation of Sports Medicine

www.afsmonline.com

Association of Chartered Physiotherapists in Sports and Exercise Medicine

www.acpsm.org

Australasian Academy of Podiatric Sports Medicine

www.aapsm.org.au

Australian Institute of Sport

www.ausport.gov.au/ais

Australian Orthopaedic Association

www.aoa.org.au

British Association of Sport and Exercise Medicine

www.basem.co.uk

British Association of Sport and Exercise Sciences

www.bases.org.uk

Canadian Academy of Sport and Exercise Medicine

www.casm-acms.org

Exercise and Sports Science Australia

www.essa.org.au

European Federation of Sports Medicine Associations

www.efsma.net

Fédération International de Médecine du Sport

www.fims.org

Hong Kong Association of Sports Medicine and Sports Science

www.hkasmss.org.hk

International Society for Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

www.isakos.com

Japanese Society of Physical Fitness and Sports Medicine

www.jspfsm.umin.ne.jp

National Academy of Sports Medicine

www.nasm.org

Orthopaedic Research Society

www.ors.org

Sports Doctors Australia

www.sportsdoctors.com.au

Sports Medicine Australia

www.sma.org.au

Sports Medicine New Zealand

www.sportsmedicine.co.nz

World Anti-Doping Agency

www.wada-ama.org

WorldOrtho

www.worldortho.com

4. Appendix

4.1. Terminology

Not applicable.

4.2. Position Statements

Position statements can be found on the websites of the organisations listed in section 3.6 Internet Sources.

SPORT AND EXERCISE PHYSIOLOGY

Ian Stewart

1. General Information

1.1. Historical development

The origins of exercise physiology can be dated to the Greek physicians, Herodicus, Hippocrates and Galen, with their work on diet, health, hygiene and physical training. Indeed Galen wrote detailed descriptions of the appropriate intensity of exercise in 200 BC and his work influenced the early anatomists, physicians and physiologists. Throughout the next 2000 years, the work of these generalist scientists and their interest in sport and exercise gave birth to the specific discipline of exercise physiology. There are numerous scientists and physicians who have been influential in the development of the discipline, indeed too many to name here. Therefore, the reader is referred to McArdle, Katch and Katch's publication *Exercise Physiology*, or Brooks, Fahey and Baldwin's *Exercise Physiology* (see section 2.2 *Reference Books, Encyclopaedias*) for a detailed historical overview.

1.2. Function

Physiology is a discipline of the biological sciences dealing with the function of living organisms and their parts. The study of physiology depends on, and is permeated with, other biological science disciplines such as anatomy, biochemistry, molecular biology and biophysics. This interdependence is based on the fact that the human body follows the natural laws of structure and function, which fall within the domain of these disciplines.

Exercise physiology is a sub-discipline of physiology that focuses on the functioning of the body during exercise. Physiological responses to exercise depend on the intensity, duration, frequency and modality of the exercise, as well as the interacting environmental circumstances, diet, health and physiological status of the individual. Sport and Exercise Physiology is one of the Fundamental Sport Sciences.

1.3. Body of Knowledge

The body of knowledge derives from its founding disciplines and as such, the initial research articles were published in physiological publications: the *American Journal of Physiology* (1898-); *Physiological Reviews* (1921-); and the German publication *Internationale Zeitschrift für angewandte Physiologie einschliesslich Arbeitsphysiologie* (1929 to 1973), now titled the *European Journal of Applied*

Physiology. Journals pertaining specifically to sport and exercise physiology were not published until after World War II, for example *The Journal of Applied Physiology* was first published in 1948 and *Medicine and Science in Sports and Exercise* in 1969. These publications and those listed in section 2.1 *Journals*, document an exponential growth in exercise physiology's body of knowledge over the last 50 years.

1.4. Methodology

The research is predominantly quantitative in nature. With interventional investigations of an acute or chronic design and observational investigations utilising cross-sectional or longitudinal design classifying the majority of research.

Investigations have progressed from the macro to the micro level, with whole body, organ system experiments being complemented by cellular responses. Thirty years ago, the focus was at an organ level, mainly due to the ability to instrument and monitor humans during acute and chronic exercise. This research was enhanced by more invasive procedures including the use of muscle biopsies and radioisotopes, as well as non-invasive imaging technologies, in both humans and heavily instrumented rodents, enabling research at a cellular level. The subsequent use of techniques borrowed from molecular biology including polymerase chain reaction (PCR), x-ray crystallography, mass spectrometry and nuclear magnetic resonance has enabled investigations of the structure, dynamics and interactions of biological molecules at the atomic level. Specifically, PCR has presented the opportunity to genetically profile large groups of athletes in an attempt to identify commonality within their DNA.

As with all disciplines, the methodologies employed by exercise physiologists have developed as technology has advanced, and undoubtedly will continue to do so. As for what the future holds, the reader is referred to Kenneth Baldwin and Fadia Haddad's article, 'Research in the exercise sciences: Where we are and where do we go from here: Part II?' (*Exercise and Sport Science Reviews* 38(2): 42-50, 2010).

1.5. Relationship to Practice

Exercise physiology has applications for all individuals from elite athlete to sedentary obese worker, child to octogenarian, and acutely injured to chronic diseased populations.

The changing demographics of western civilisation have produced two major application areas: the ageing population and the obesity epidemic. The loss of physiological function associated with ageing has been shown to be slowed, if not reversed, by exercise and physical activity. An increase in sedentary lifestyles has contributed to the obesity epidemic. Obesity associated illnesses; type II diabetes and vascular disease are also placing huge demands on public health systems. Appropriate prescription and monitoring of exercise is critical if these two major influences facing the world are to be controlled.

Age and obesity also combine as an occupational issue. While technology has mechanised numerous manual handling processes, many still remain. Age and obesity have decreased the functional capacity of the worker, placing the worker, and depending on the occupation, colleagues and the public, at an increased risk of injury. Identifying the physiological cost of work tasks within an occupation, screening potential employees and matching workers with appropriate functional capacity to tasks, is an ever increasing role for the occupational physiologist.

Rehabilitation from acute musculoskeletal injuries or from chronic diseases has long been the domain of the allied health professions, including exercise physiology. Cardiac rehabilitation is the most widely recognised clinical application area for exercise physiology. However, respiratory, musculoskeletal, neurological and other vascular diseases have all been shown to benefit from exercise.

Sports physiology is concerned with developing profiles of individual athletes and teams on a sports specific basis through monitoring and evaluation. The monitoring can then be employed to identify specific strengths and weakness, prescribe appropriate training levels and periodise training programmes, assess health status and monitor overtraining, and ultimately maximise the sports potential of each individual athlete. Another branch of sports physiology is involved in detecting athletic performance that has been artificially and illegally enhanced by, for example, anabolic agents, stimulants or blood doping.

1.6. Future Perspectives

Baldwin, K. and Haddad, F. (2010). Research in the exercise sciences: Where we are and where do we go from here: Part II? *Exercise and Sport Science Reviews*, 38(2), 42-50.

References

Not applicable.

2. Organisational Network

2.1. Major International Organisations and Networks

At the international level, exercise physiology is not organised by a single body but has influences within the Fédération Internationale de Médecine du Sport (FIMS)/International Federation of Sports Medicine; the International Council of Sport Science and Physical Education (ICSSPE); and the International Union of Physiological Sciences (IUPS).

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

The European College of Sports Science was founded in 1995 with the purpose of promotion of sport science at the European level. For that it is dedicated to the generation and dissemination of scientific knowledge concerning the motivation, attitudes, values, responses, adaptations, performance and health aspects of persons engaged in sport, exercise and movement. The college holds annual congresses and publishes both annual bulletins plus a peer reviewed journal, the *European Journal of Sport Science*.

The British Association for Sport and Exercise Science (BASES, formerly BASS) was founded in September 1984 following the dissolution of the Biomechanics Study Group (SBSG), the British Society of Sports Psychology (BSSP) and the Society of Sports Sciences (SSS). BASES' mission is to promote excellence in sport and exercise sciences through evidence-based practice. The Association disseminates information through workshops and its annual conference.

The Canadian Society of Exercise Physiology (CSEP/SCPE) was founded at the Pan-American Games, Winnipeg, Manitoba in 1967, although it was originally known as the Canadian Association of Sport Sciences. The mission of the Society is to promote the generation, synthesis, transfer and application of knowledge and research related to exercise physiology (encompassing physical activity, fitness, health, nutrition, epidemiology and human performance). CSEP/SCPE holds an annual scientific conference and publishes both fitness and scholarly publications including position statements and the peer reviewed journal *Applied Physiology, Nutrition and Metabolism*.

The American Society of Exercise Physiology (ASEP) is the professional organisation representing and promoting the profession of exercise physiology within America. It is committed to the professional development of exercise physiology, its advancement and the credibility of exercise physiologists. ASEP's objective to broaden the professionalism perspectives and expose students and others to a much wider range of professional thinking and resources, is carried out through the efforts of its online newsletters and journal, the *Journal of Exercise Physiology*.

The American College of Sports Medicine (ACSM), founded in 1954, promotes and integrates scientific research, education and practical applications of sports medicine and exercise science to maintain and enhance physical performance, fitness, health and quality of life. ACSM holds numerous scientific conferences including its Annual Meeting as well as speciality conferences. ACSM publishes position stands, plus peer reviewed journals *Medicine and Science in Sports and Exercise*, *Exercise and Sport Sciences Reviews*, ACSM's *Health and Fitness Journal* and *Current Sports Medicine Reports*.

The Society of Chinese Scholars on Exercise Physiology and Fitness (SCSEPF) is committed exclusively to the advancement and improvement of exercise physiology and fitness. SCSEPF provides a forum through its annual conference and peer reviewed publication, *Journal of Exercise Science and Fitness*, for the exchange of information to stimulate discussion and collaboration among exercise physiologists and fitness professionals.

Within Australia, three organisations support sport and exercise physiology: Exercise and Sport Science Australia (ESSA); the Australian Physiological Society (AuPS); and Sports Medicine Australia (SMA). ESSA is a professional organisation which is committed to establishing, promoting and defending the career paths of tertiary trained exercise and sports science practitioners. ESSA holds biennial scientific conferences to promote the synthesis of knowledge from scientific research to contemporary practice. The objectives of AuPS are to promote the advancement of the science of Physiology and encourage all aspects of research and teaching in this discipline. AuPS disseminates knowledge through quarterly newsletters and annual conferences. SMA is an advisory board for all medical and allied health issues for active people, with safe participation in sport and healthy physical activity at all stages of life being its primary concern. SMA provides continuing education to practitioners, position papers, policies and guidelines to ensure safe participation in exercise. SMA disseminates information through its annual scientific conference and its fitness and scholarly publications.

There are numerous other national associations/societies of physiology that support the sub-discipline of exercise physiology, including those affiliated with the International Union of Physiological Sciences.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

The following journals contain articles related to various aspects of exercise and sports physiology investigation.

- *Acta Physiologica Scandinavica*
- *Applied Physiology, Nutrition, and Metabolism* previously *Canadian Journal of Applied Physiology*
- *British Journal of Sports Medicine*
- *European Journal of Applied Physiology*
- *European Journal of Sport Science*
- *Exercise and Sport Science Reviews*
- *International Journal of Sports Physiology and Performance*
- *International Journal of Sport Nutrition and Exercise Metabolism*
- *Journal of Applied Physiology*
- *Journal of Athletic Training*
- *Journal of Exercise Physiology online*

- *Journal of Exercise Science and Fitness*
- *Journal of Human Movement Studies*
- *Journal of Science and Medicine in Sport*
- *Journal of Sport Sciences*
- *Journal of Strength and Conditioning Research*
- *Medicine and Science in Sports and Exercise*
- *Scandinavian Journal of Medicine and Science in Sports*
- *Strength and Conditioning Journal*.

3.2. Reference Books, Encyclopaedias, etc.

Numerous reference books exist on the topic of sport and exercise physiology. Listed below are a selection of those that have editions published since the year 2000.

- American College of Sports Medicine. (2009). *ACSM's Guidelines for Exercise Testing and Prescription* (8th Ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- American College of Sports Medicine. (2009) *ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription* (6th Ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- American College of Sports Medicine. (2009) *ACSM's Resources for Clinical Exercise Physiology* (2nd Ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- American College of Sports Medicine. (2005) *ACSM's Advanced Exercise Physiology*. Philadelphia, PA: Lippincott Williams and Wilkins.
- Astrand, P., Rodahl, K., Dahl, H., and Strømme, S. B. (2003). *Textbook of Work Physiology: Physiological Bases of Exercise* (4th Ed.) Champaign, IL: Human Kinetics.
- Brooks, G. A., Fahey, T. D., and Baldwin, K. M. (2008). *Exercise Physiology: Human Bioenergetics and its Applications* (4th Ed.). Boston, MA: McGraw-Hill.
- Brown, S. P., Miller, W. C., and Eason, J. M. (2006). *Exercise Physiology: Basis of Human Movement in Health and Disease*. Philadelphia, PA: Lippincott Williams and Wilkins.
- Gore, C. J. (2000). *Physiological Tests of Elite Athletes*. Champaign, IL: Human Kinetics.
- Hale, T. (2003). *Exercise Physiology: A Thematic Approach*. London: John Wiley.
- Hargreaves, M., and Hawley, J. (2003). *Physiological Bases of Sports Performance*. Boston, MA: McGraw-Hill.
- McArdle, W. D., Katch, F. I., and Katch, V. L. (2009). *Exercise Physiology: Energy, Nutrition, and Human Performance* (7th Ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- Powers, S. K., and Howley, E. T. (2010). *Exercise Physiology: Theory and Application to Fitness and Performance* (7th Ed.). Boston, MA: McGraw-Hill.
- Robergs, R. A., and Keteyian, S. J. (2002). *Fundamentals of Exercise Physiology: For Fitness, Performance, and Health* (2nd Ed.). Boston, MA: McGraw-Hill.
- Wasserman, K., Hansen, J. E., Sue, D. Y., Stringer, W. W., and Whipp, B. J. (2004). *Principles of Exercise Testing and Interpretation: Including Pathophysiology and Clinical Applications* (4th Ed.). Philadelphia, PA: Lippincott Williams and Wilkins.
- Kenney, W. L., Wilmore, J. H., and Costill, D.L. (2011). *Physiology of Sport and Exercise* (5th Ed.). Champaign, IL: Human Kinetics.

3.3. Book Series

The International Olympic Committee's Medical Commission, in collaboration with the International Federation of Sports Medicine, publishes the *Handbook of Sports Medicine and Science*. This is a series of specialist reference volumes designed specifically for the use of professionals working directly with competitive athletes.

3.4. Conference/Workshop Proceedings

Various national organisations publish the proceedings of their annual conferences through supplement volumes of their own journals. Speciality workshops held by interest groups within the respective societies often publish their proceedings on their home page on the World Wide Web.

3.5. Data Banks

No specific data banks exist with regard to exercise physiology. Original research articles can be obtained through appropriate databases i.e. Medline, ScienceDirect and SPORTDiscus.

3.6. Internet Sources

The following internet sources are available for use in relation to various aspects of exercise physiology:

American College of Sports Medicine (ACSM)

www.acsm.org

American Society of Exercise Physiologists (ASEP)

www.asep.org

Australian Institute of Sport (AIS)

www.ausport.gov.au/ais/

British Association for Sport and Exercise Science (BASES)

www.bases.org.uk

Canadian Society of Exercise Physiology (CSEP/SCPE)

www.csep.ca

Exercise and Sport Science Australia (ESSA)

www.essa.org.au

European College of Sports Sciences (ECSS)

www.ecss.mobi

Gatorade Sports Science Institute (GSSI)

www.gssiweb.com

International Council of Sport Science and Physical Education (ICSSPE)

www.icsspe.org

International Federation of Sports Medicine (FIMS)

www.fims.org

International Society of Exercise and Immunology

www.isei.dk/

International Union of Physiological Sciences (IUPS)

www.iups.org

National Strength and Conditioning Association (NSCA)

www.nasca-lift.org

The Physiological Society

www.physoc.org

Society of Chinese Scholars on Exercise Physiology and Fitness (SCSEPF)

www.scsepf.org

4. Appendix Materials

4.1. Terminology

The terminology used in sport and exercise physiology draws predominantly from the disciplines of physiology and medicine.

4.2. Position Statements

Position statements on topics of current and vital interest can be found on the web sites of organisational networks listed in section 3. *Organisational Network*, for example ACSM, CSEP and ESSA.

SPORT AND EXERCISE PSYCHOLOGY

Gershon Tenenbaum, Tony Morris, Dieter Hackfort and Edson Medeiros Filho

1. General Information

Sport and Exercise Psychology is a fundamental sport science discipline. The establishment of the discipline resulted from the development and differentiation of disciplines and subgroups of specialists in the scientific community. The emergence and uniqueness of sport and exercise psychology is described in the following figure.

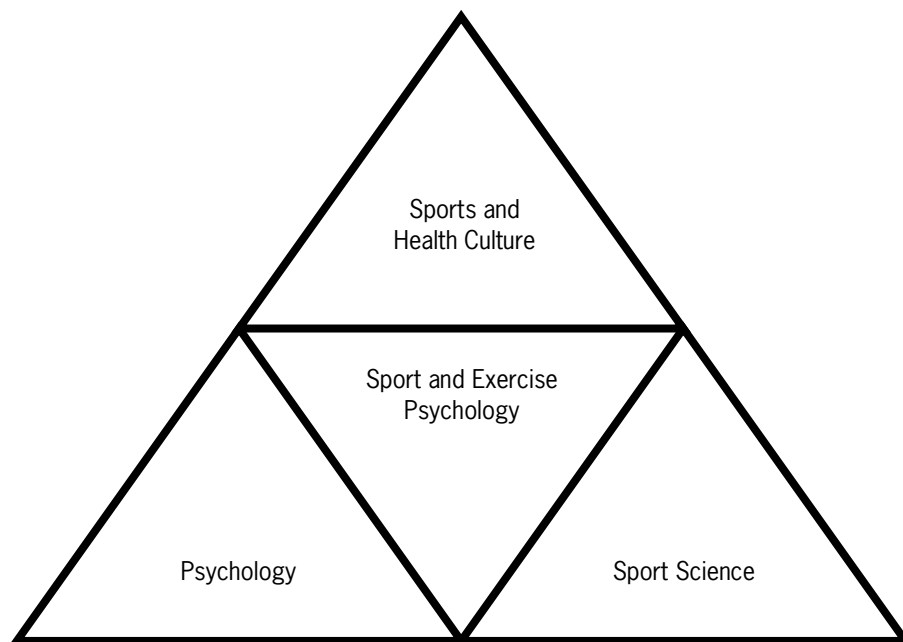


Figure 1. Sport and Exercise Psychology: a scientific discipline emerging from and sharing with related disciplines.

1.1. Historical Development

Sport psychology is a relatively young discipline that was developed in the 20th century. Briefly, after the foundation of the first laboratory for experimental psychology in Leipzig (Germany) by Wilhelm Wundt in 1879, a first sport psychology laboratory was established in 1920 by Robert Werner Schulte in Berlin (Germany), and in 1925 by Coleman Griffith in Illinois (USA). Prior to that, in 1913, Pierre de Coubertin, the founder of the modern Olympic Games, organised the First International Congress on the Psychology and Physiology of Sport (the only one). Following a dormant period, sport psychology

developed substantially in the 1960s, in Europe and the United States, by university professorships and the foundation of the International Society of Sport Psychology (ISSP) in 1965. The discipline developed in the frame of sport science as a function of the increased interest in sport and exercise within the modern society, particularly in elite sport. Sport and exercise psychology has developed into a prominent research domain, a scientific discipline taught in academic institutes worldwide and a widespread field of application. The practice of sport psychology has seen substantial growth in many sport organisations, with athletes increasingly using psychological knowledge in training and preparation for competition. Sport and exercise psychology is a field of inquiry and application that covers issues, such as mental training, motor learning, psychological skills, injury rehabilitation, interventions for enhancing mental, emotional and behavioural functioning, perceptual-cognitive functioning, expertise, personality, group cohesion, leadership, burnout and over-training, disabilities, gender issues, cross cultural perspectives, methodologies and others.

1.2. Function

Sport and exercise psychology is a scientific and professional stream of knowledge that focuses on various dimensions of sport and exercise behaviour. Weinberg and Gould (2011) defined sport and exercise psychology as the 'scientific study of people and their behaviours in sport and exercise activities and the practical application of that knowledge'. The general orientation of the discipline is to describe, explain, predict and develop interventions to modify intentional organised and purposive behaviour (actions) in sports based on empirical research, qualitative analyses and ethical standards.

The perspective of sport and exercise psychology is twofold. The first is analysis pertaining to how actions in sports are regulated/controlled by psychic processes, and the second is how actions in sports and exercise regulate/control psychic processes (cognitive, motivational, volitional and affective/emotional processes; see Hackfort and Birkner, 2005) with the intention to enhance sound understanding (theoretical concepts), advance methodological approaches (research methods) and to enlarge effective interventional tools (applied methods).

Applied sport and exercise psychologists are engaged in performance enhancement, counselling, injury rehabilitation and promotion of physical activity for health maintenance. Research-oriented sport and exercise psychologists develop and test models and theories, and undertake scientific investigations to understand sport- and exercise-related actions. Sport psychologists, whether researchers or practitioners, contribute to personal growth in conditions where exercise and sport are performed. Contemporary sport psychologists are engaged in the pursuit of three varied, but interlocked activities; theory and research, education and application.

Theory and Research

This stream is concerned with establishing field-driven models and theories that represent the domains of sport and exercise. It is also concerned with mainstream psychological issues and methodology.

Education

This stream is concerned with dissemination of knowledge that can be applied to practitioners, students and populations with special needs. It also incorporates position stands on various behaviours and ethical issues.

Applications

This stream is concerned mainly with applications to a variety of professions such as: coaching, education, clinical practice, athletic training and performance, and injury prevention and rehabilitation. These three activities are presented in more detail in the table below.

1.3. Body of Knowledge

Sport and exercise psychology is a unique scientific discipline, but it derives its theoretical and applied perspectives from several sources of scientific and applied knowledge. These are primarily:

1. Sport Science and Kinesiology, including motor learning/development/control, biomechanics and exercise physiology
2. Psychology, especially the social and cognitive streams, as well as various sub-disciplines of applied psychology
3. Health Sciences, especially medical, social and behavioural knowledge
4. Methodology, in particular measurement, assessment and evaluation, as well as statistical methods.

In searching for trends in sport and exercise psychology theory and research, Biddle (1997) surveyed all of the articles published in the *International Journal of Sport Psychology (IJSP)* and the *Journal of Sport and Exercise Psychology (JSEP)*; called *Journal of Sport Psychology* from 1979 to 1987) from 1985 to 1994. The most researched topics were motivation, anxiety, imagery, self-efficacy/confidence, exercise and mental health, and group dynamics. In addition, most of the publications consisted of experimental (30.3%) or survey (38.0%) methodologies, whereas only 13.1% were literature reviews, 8.6% were psychometrics, 5.7% qualitative, 2.7% archival/historical, 1.0% case studies, 0.4% content analysis and 0.2% meta-analyses. Morris (1999) confirmed this publication/interest pattern in an analysis of *IJSP* and *JSEP* from 1979 to 1998. Comparisons between five-year periods indicated that the proportion of correlational (questionnaire/survey) research has increased. Biddle (1997) noted that most of the participants in the studies were school (14.4%) and college (33.8%) students, whereas only 3.8% were elite athletes. Recently, Conroy, Kaye and Schantz (2008) reported that passive observation designs have accounted for most of the studies (i.e., 63%) in the Sport Psychology domain published in the *Journal of Sport and Exercise Psychology* from 1974 through to 2004. Moreover, they reported that 80% of the studies, which were conducted during this time interval, relied on self-report measures, and that 93% of all the empirical reports were based on quantitative data. Single case-research designs constituted less than 1% of the studies in the field. Conroy et al. (2008) also noticed that throughout the years, the average sample size increased substantially due to incorporation of power analysis concerns in the study designs.

In short, sport and exercise psychology is a domain that consists of several inter-related bodies of knowledge (e.g., psychophysiology, motor learning and control, sport pedagogy, sport sociology), which share motor and physical activity as a common interest. Some studies are theory driven, whereas others are field driven. Most research is applied-oriented (in both sport and exercise) and relatively little is purely theoretical or methodological.

Theory and Research	Educational	Applications
Cognitive mechanisms.	Psychological principles in teaching physical education.	Performance enhancement.
Motivation.	Teaching principles in special populations.	Team cohesion.
Psychophysiology.	Psychological principles in coaching youth, adult and elite athletes.	Clinical (i.e., treatment, rehabilitation).
Exercise and health aspects.	Motivational principles to adhere to motor programmes.	Educational (i.e., teaching, learning).
Personality.	Position stands on relevant issues such as: aggression, ethics in sport and psychological benefits of physical activity.	Leisure and recreation.
Group dynamics.		Social support (i.e., youth and elite sports, exercise programmes).
Communication.		
Emotions.		
Arousal, stress and anxiety.		
Motor learning, development, control.		
Gender issues.		
Burnout and over-training.		
Drop out.		

Table 1. Functions of Sport and Exercise Psychology.

1.4. Methodology

A wide range of research designs (e.g., experimental and non-experimental, laboratory and field studies, longitudinal and cross-sectional, single case and group studies) and methods (e.g., qualitative and quantitative, interview and observational methods, questionnaires/scales and tests) have been employed in sport and exercise psychology research and practice. Morris (1999) examined the methods used in research published in the *IJSP* and the *JSP/JSEP* from the inception of the latter in 1979 to 1998. The 20-year period was divided into blocks of five years, enabling him to comment on trends. Consistent with Biddle's (1997) results, Morris (1999) found that laboratory/field experiments and questionnaire studies were the two most common research methods, followed by theoretical/methodological papers. In the period from 1993 to 1998, more than half of the published work in these journals was questionnaire studies or psychometric studies of new questionnaires. In their applied work, sport psychologists use questionnaires extensively. Other techniques, such as observation and direct interviews with athletes, coaches, educators, administrators and people with special needs are also common. As the extent of counselling has increased in applied work (Hanrahan and Andersen, 2010), use of these introspective techniques has also become more prevalent in research. Recently, the integration of quantitative and qualitative types of data has been recommended, in research and practice, to better account for sport and exercise behaviours, as well as for validation requirements. Ostrow (1996) collected 314 psychometrically-validated tests that have been developed specifically for use in the sport and exercise psychology domain. Duda (1998) has thoroughly reflected the different approaches to measurement in sport and exercise psychology, which has been recently updated and expanded significantly by Tenenbaum, Eklund and Kamata (2011). Computer-assisted testing is not yet popular in sport and exercise psychology research and practice but it can be predicted that based on the development of the new technologies (e.g., biofeedback equipment, virtual reality and simulation, fMRI, transcranial magnetic stimulation) that computer-based test- and training programmes would receive more attention in the future (see Beilock, 2008).

Finally, research methods and statistical procedures have developed in the past few years. Multi-level analysis (i.e., Hierarchical Linear Modelling) and structural equation modelling are current trends in the quantitative arena. Probabilistic approaches to performance enhancement rather than deterministic ones have been emphasised. Idiosyncratic frameworks and qualitative methodologies have also received more attention from both applied and research oriented sport psychologists (see Tenenbaum and Eklund, 2007 for review). Cross cultural sport psychology concepts and applications are also important areas for future research and practice (see Schinke and Hanrahan, 2009).

1.5. Relationship to Practice

In addition to the above outlined (see section 1. *General Information* and Table II.1) relationship, sport and exercise psychology aims to:

- Investigate the preconditions and circumstances for effective use or application of relevant knowledge and methods (technology research);
- Examine the effectiveness and efficiency of the interventional techniques (evaluation research);
- Ensure that the application of psychological techniques, counselling and treatment methods are exclusively provided by appropriately educated, trained and competent experts who adhere to the ethical principles of the discipline (Supervision). A Position Stand about Supervision in Sport Psychology was introduced online by the International Society of Sport Psychology (ISSP) in 2007 and a further 'ISSP Statement on Ethical Principles' is now online (www.issponline.org).

1.6. Future Perspectives

The future developments of sport and exercise psychology should be considered from educational, professional, organisational and scientific perspectives. There is a tendency toward increasing differentiation on the one hand and toward multi-perspective and inter-disciplinary approaches on the other. Cross cultural sport and exercise psychology is also an emerging interest among various scholars and practitioners (see Schinke and Hanrahan, 2009). More scientific effort is needed to better comprehend the linkage between the emotional, cognitive and motor systems under conditions which evoke various degree of pressure. In such endeavours, researchers will integrate over-behavioural and covert-neurological measures. Moreover, more research will be devoted to evidenced-based practice, which rely on longitudinal case studies and natural observations to further enhance performance consultation.

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2. Organisational Network

Few formal and systematic examinations have been conducted on the global status of sport and exercise psychology, however, updated statistics indicate that the number of sport psychologists is growing in North America and around the world. For instance, the American Psychological Association – Division 47, Exercise and Sport Psychology (APA Division-47) has over 1,000 members and student affiliates. The Association for Applied Sport Psychology (AASP) has about 2,000 members and the North American Society for the Psychology of Sport and Physical Activity (NASPSPA) has approximately 400 professionals and student affiliates. It should be noted that most of the AASP, APA Division-47 and NASPSPA members and student affiliates are from North America. Nonetheless, all these organisations have worldwide representation. The International Society of Sport Psychology (ISSP) and the European Federation of Sport Psychology (FEPSAC) have about 500 registered members each.

Although it remains a challenge to obtain reliable figures from Latin America, Asia, Australia and Africa, there is evidence suggesting that the number of sport psychologists has increased in these continents. For instance, there are around 50 full members of the Australian Psychological Society's College of Sport Psychologists. Moreover, updated statistics indicate that 15 out of 45 Asian countries (33%) have professionals affiliated to the Asian South Pacific Association of Sport Psychology. The number of sport psychologists from Latin America has also increased, and the last Conference organised by the South American Society of Sport Psychology (SOSUPE) had over 200 attendants from four different countries (i.e., Argentina, Brazil, Chile and Uruguay).

Since 1992, the number of sport psychology societies has continued to increase. Readers are referred to the third edition of the sport psychology *Sourcebook*, pp. 29-232 (Lidor et al., 2001), for specific details about the history and organisational structures of sport psychology in 48 nations around the globe.

2.1. Major International Organisations and Networks

- International Society of Sport Psychology (ISSP)
- Association for Applied Sport Psychology (AASP).

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- North American Society for the Psychology of Sport and Physical Activity
- American Psychological Association – Division 47, Exercise and Sport Psychology
- Fédération Européenne de Psychologie du Sport et Activité Corporelle / European Federation of Sport Psychology (FEPSAC)
- Australian Psychological Society - College of Sport Psychologists
- South American Society of Sport Psychology.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

The main English language journals in the field of sport and exercise psychology are:

- *International Journal of Sport and Exercise Psychology* (official journal of the ISSP)
- *International Journal of Sport Psychology*
- *International Journal of Sport and Exercise Psychology*
- *International Reviews of Sport and Exercise Psychology*
- *Journal of Applied Sport Psychology*
- *Journal of Clinical Sport Psychology*
- *Journal of Performance Enhancement*
- *Journal of Sport Behavior*
- *Journal of Sport Psychology in Action*
- *Journal of Sport and Exercise Psychology*
- *Psychology of Sport and Exercise*
- *Sport and Exercise Psychology Review*
- *The Sport Psychologist*.

Depending on its theme, sport and exercise psychology material are also published in journals focusing on Sport Medicine, Exercise Physiology, Strength and Conditioning and Coaching. These journals are usually available on the major data banks in the field (see section 3.5. Data Banks).

3.2. Reference Books, Encyclopaedias, etc.

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3.3. Book Series

Recently, Fitness Information Technology (FIT) published a series of edited volumes on issues of fundamental relevance entitled *International Perspectives on Sport and Exercise Psychology* edited by Hackfort and Tenenbaum, and a series entitled *Sport Psychology Library*. These series are consumer-oriented and aimed at a wide audience of participants and professionals. For more information visit <http://www.fitinfotech.com>.

3.4. Congress/Workshop Proceedings

The proceedings of the ISSP, FEPSAC, AAASP and NASPSA annual conferences represent the major sources of information in the field.

3.5. Data Banks

The main data bank used to locate works in sport and exercise psychology is SPORT DISCUS by SIRC (Sport Information Resource Centre) based in Canada. Publications in sport and exercise psychology can also be surveyed in databases such as: MEDLINE, PSYCLIT, PsycINFO (CSA), PsycARTICLES, ERIC (CSA), JSTOR, ISI Web of Science.

3.6. Internet Sources

The major internet sources are listed below and represent websites of the most prominent organisations in the sport and exercise psychology domain.

- www.issponline.org (International Society of Sport Psychology)
- www.appliedsportpsych.org (Association for Applied Sport Psychology)
- www.naspspa.org (North American Society for the Psychology of Sport and Physical Activity)
- www.apa.org/about/division/div47.aspx (American Psychological Association – Division 47, Exercise and Sport Psychology)
- www.fepsac.com (Fédération Européenne de Psychologie du Sport et Activité Corporelle).

4. Appendix Material

4.1. Terminology

Terms used in sport and exercise psychology are principally derived from the parent domain of psychology. Some unique terms that relate psychological constructs to sport are also common. Sport psychologists frequently use terms from related sport and motor disciplines, such as sports medicine, exercise physiology, biomechanics, motor control and sociology of sport.

4.2. Position Statements

Position Stands and Statements are published by the ISSP (www.issponline.org), FEPSAC (www.fepsac.com/index.php?cID=74) and AASP (www.appliedsportpsych.org/pubs). These position statements cover various topics (e.g., ethical principles, doping and substance abuse in competitive sport, and human diversity) and offer guidelines for competent sport psychology consultation and research.

The ISSP's positions stands include:

- (c1) Physical Activity and Psychological Benefits;
- (c2) Training and Selection of Sport Psychologists: An International Review; (b) Competencies and their Accomplishment in Sport and Exercise;
- (c3) Psychology Career Development and Transitions of Athletes.

The AASP position stands provide guidelines for quality of applied sport psychology consultation. Specifically, these position stands highlight issues 'dealing with professionally unethical behaviours,' 'how to choose a sport psychology consultant' and 'Position Statement on human diversity'.

Free Statement

Videos and DVDs are available to support learning and training in sport and exercise psychology published/distributed by FIT (see [www. fitinfotech.com/video/videoreresults.tpl](http://www.fitinfotech.com/video/videoreresults.tpl)).

In addition to ethical standards, internationally acceptable standards for education and training in sport and exercise psychology, and criteria to determine professional differentiations and specifications (certification) in sport and exercise psychology (e.g., Sport Psychologist, Mental Coach, Sport Psychology Consultant, Exercise Psychology Consultant) are needed. This is one of the missions of the ISSP and various position stands contribute to the fulfilment of this mission.

Sports can be regarded as a model for globalisation. Hence, intercultural and interindividual actions and relations are subject to the future theoretical, empirical and applied work in sport and exercise psychology. Cross cultural methodologies and concepts as well as inter-disciplinary cooperation in Sport Science, Health Science and Psychology are needed to cope with the challenges associated with the increasing complexity in research and practice – not only, but also in sport and exercise psychology.

SPORT HISTORY

Annette Hofmann and Gertrud Pfister

1. General Information

1.1. Historical Development

Sport history, especially the tradition of Greek antiquity, has been closely connected with the development of physical cultures in Western societies. The German, Johann Christoph Friedrich GutsMuths in his famous book about *Gymnastic for the Youth* (1793), which has been translated in many languages, as well Friedrich Ludwig Jahn, the 'father' of German 'Turnen' (gymnastics), referred to Greek athletics as their models. In the second part of the 19th century, history was part of the education programme for physical education teachers and in the first half of the 20th century, a large and in-depth work on the history of gymnastics, Turnen and Sport, was published. After the Second World War, sport history developed as an academic discipline. It is integrated in sport sciences or sports studies and depends also on the 'mother discipline', the historical sciences.

The International Society for the History of Physical Education and Sport (ISHPES) is the umbrella organisation for sport historians from all over the world. ISHPES formed in 1989 through the merging of the International Committee for the History of Physical Education and Sport (ICOSH) and the International Association for the History of Physical Education and Sport (HISPA). ICOSH was founded as early as 1967 in Prague and HISPA in 1976 in Zürich. With the establishment of these organisations, a network of professional sport historians developed. ISHPES has been affiliated, since 1990, with the International Council of Sport Science and Physical Education (ICSSPE).

1.2. Function

The aims of sport history are to:

- detect and describe developments in physical culture, physical education and sport in different historical periods and different occasions
- identify reasons, processes, connections and effects of historical developments in the area of physical cultures, physical education and sport
- interpret the interdependent influences between physical cultures and societies
- describe and explain the history of physical activities in relation to political, economical and social history

- investigate the developments and changes of different concepts of physical activities, different types of sport and performance levels, different organisations and institutions and different persons and groups involved in physical cultures
- determine the influences of gender, class, race, religion and ideology on the opportunities and barriers for participation in physical activities
- identify norms, values and ideologies connected with physical activities and sport
- gather knowledge about local, regional, national and international developments
- identify persons of importance for sport history
- conduct intercultural comparisons
- articulate sport as a social and cultural phenomenon
- support understandings of the present situation of sport
- contribute to reflections about the future of physical education and sport
- support inter-disciplinary studies with other disciplines, e.g. sociology, philosophy, pedagogy, etc.
- provide the academic base for sport related exhibitions and sport museums and
- develop visions and perspectives.

1.3. Body of Knowledge

The history of exercises, games, gymnastics and sport has a long tradition. The ‘fathers’ of sport, gymnastics and ‘Turnen’, among others GutsMuths and Jahn, used historical sources in order to find and select exercises and activities, which they included in their concept of physical culture. Since the middle of the 19th century, a large number of articles and books have been published in Western industrialised societies focusing on the different areas of sport history from around the world. Additionally, there are publications about the sport history of a country, a region or a city, and also many books on the history of a specific sport discipline. Finally, biographies and autobiographies as well as histories of sport organisations contribute to the body of knowledge, as do sport museums.

The range of the body of knowledge is defined by the above-mentioned aims and functions of sport history. In order to explain processes and developments, theoretical approaches must be included in the work of sport historians. In addition, the results of the ‘mother’ discipline, or better, of the many disciplines of historical sciences, must be integrated into the knowledge of sport history. There are especially close relations between sport history and the history of health, leisure and medicine. Moreover, there is a close connection with other disciplines of sport studies such as sport sociology, sport pedagogy, sport philosophy and sport ethnology.

1.4. Methodology

Sport history uses the same methodological approaches as history, depending on the research questions and the accessible material. The traditional methodology of history is the phenomenological-

hermeneutical approach, meaning the collection, selection, critical evaluation and interpretation of sources. For certain historical periods and for specific problems, an oral history approach, which means the interrogation of contemporary witnesses, may be useful. Possibilities and problems of oral history are discussed extensively in textbooks about methods and auxiliary sciences of history. In addition, empirical analytical methods can be used, i.e. content analyses.

Sport history aims to reconstruct the developments, processes and connections between physical activities and socio-cultural conditions. In order to explain results and determine insights into causes and effects, sport history employs different theoretical approaches. Many scholars understand sport history as part of social history and they describe the inter-connectedness of the relations between the interests of social classes and groups, the economical and political developments and the physical culture of a given period. However, there are also sport historians who try to gain insights into the cultural-historical configuration with the help of the civilisation theory founded by Norbert Elias and his follower Eric Dunning. In addition, the approaches of the French sociologists Michel Foucault and Pierre Bourdieu, or Eric Hobsbawm, Anthony Giddons and Richard Sennet among others, play a role in the discussions of the sport history scientific community. In recent years, the work of Pierre Nora on the functions of history as 'Lieux de Mémoire', places of remembrance, has influenced the historical scientific community. Thus, the role of collective memory and political myths for constructing and strengthening a nation's states and for the identification with nations, regions or groups has been highlighted. Because sport mega events, successes and heroes can be powerful myths and can become places of remembrance. This approach is very useful for sport history.

1.5. Relationship to Practice

It is evident that sport history does not necessarily have an immediate influence on learning, training and practising sport. However, sport history can offer knowledge, which gives insight into developments, causes and effects and the backgrounds of physical culture. Thus, sport history can contribute to an understanding of the present and can provide knowledge that is necessary for making decisions, developing strategies and clarifying perspectives. Sport history also helps to detect myths and ideologies and to destroy the conviction of the self-evidence of sporting practices. For example, research in sport history can show that performance, competition and records are not an anthropological constant, but characteristics of the physical culture of modern industrialised countries. As a second example, investigations on the development of women's and men's sport demonstrate shifts in gender roles in sport and society. These studies can be used to fight against stereotypes and can remove barriers for women (and men) in sport today.

The rising number of sport related exhibitions and museums as well as films with a sport historical focus show that there is a need for academic sport history to support these fields appropriately.

1.6. Future Perspectives

Even though sport history used to be one of the fundamental disciplines of sport studies, today it is in an ambivalent situation. On one hand, interest in, and the need for, historical approaches and knowledge has increased in recent years. This can be seen in the rising number of publications, sport museums and exhibitions with a sport historical context. Also the standard of research is higher than ever before. Conferences on sport history attract more colleagues, as well as colleagues from other academic fields. However, on the other hand, sport history has lost its role as an integrative part of the curricula of sport and physical education studies. In many countries, decreasing financial resources of universities have led to a concentration on the so-called 'applied sciences'. It is a great challenge for all involved in sport history to fight for academic recognition of their subject and to transfer the positive attitude towards history into sport departments. Sport history will only flourish if it has its academic background and stronghold in universities. In order to get more public attention and support, it will also be necessary to discuss new ways of researching and teaching sport history.

2. Organisational Network

2.1. Major International Organisations and Networks

The International Society for the History of Physical Education and Sport (ISHPES), is the successor to International Association for the History of Physical Education and Sport (HISPA) and International Committee for History of Sport and Physical Education (ICOSH). ICOSH was founded in 1967 in Prague, HISPA in Zürich in 1973. At the 13th International HISPA Congress in Olympia (Greece) in 1989, ICOSH and HISPA decided to merge into one worldwide society, ISHPES.

ISHPES promotes research and teaching in sport history. Its purpose is to facilitate exchanges in sport history through international congresses and seminars and through the production and dissemination of appropriate publications. ISHPES organises seminars and congresses and publishes an online bulletin twice a year. The society gives two awards: the ISHPES award for the outstanding work of a scholar of high reputation; and an award for a young scholar for his/her research.

The International Society of Olympic Historians (ISOH) was formed in 1991, in London. The purpose of the organisation is to promote and study the Olympic Movement and the Olympic Games. This purpose is achieved primarily through research into the history of the Olympic Movement and Olympic Games, the gathering of historical and statistical data and the publication of research via journals, monographs, etc.

There are several international associations focusing on a specific type of sport, such as the International Skiing History Association or the International Cycling History Conference.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

The European Committee for the History of Sport (CESH) was founded in 1995, in Bordeaux, France, to further the interest of cooperation amongst European scholars of different language backgrounds. It is supported by a college of fellows and organises annual conferences, which emphasise the work of young scholars, and a peer reviewed yearbook.

The Northeast Asian Society for the History of Physical Education and Sport was founded in 1994. It includes primarily scholars from China, Korea, Chinese Taipei and Japan. Their first congress was held in 1995. Members organise congresses every two years and produce a publication twice a year.

Many countries have a national sport history organisation. The oldest is the North American Society for Sport History (NASSH) which was founded in 1972. With over 400 members, it is presently the biggest sport history organisation in the world. NASSH meets once a year and publishes the *Journal of Sport History*, which has become one of America's most frequently cited scholarly journals.

Most of the other organisations date back to the 1980s. The British Society of Sport History (BSSH) was founded in 1982. Besides its annual conference, it publishes the journal *Sport in History*, a newsletter and occasional monographs through its imprint Sports History Publishing.

The French Société française d'histoire du sport (SFHS) had its beginnings in 1987 and since 2007, has published the journal *Sport et Sciences Sociales*.

The Australian Society for Sports History (ASSH) was founded at the fourth Sporting Traditions Conference in 1983 and then launched the first issue of its journal, *Sporting Traditions*, in November, 1984.

Since its expansion, beginning in the early 1990s, sport history in Brazil has developed by means of a network of universities, rather than a national society. The embodiment of the network takes place during an annual national congress and its respective proceedings.

There are also very active sport history societies in Japan, Finland, Denmark and other countries. In Germany, sport historians form a section in the inter-disciplinary German Association of Sport Sciences (Deutsche Vereinigung für Sportwissenschaft), they meet annually and publish their proceedings.

Only some examples of specialised centres can be given. The International Centre for Sports History and Culture, De Montfort University, Leicester, United Kingdom was founded in 1995. It has full-time academics attached to it, as well as visiting national, European and international academics, journalists and experts in the field of sport. Staff at the Centre supervise a wide range of PhD and other research students who are pursuing their interest in the history, practice and importance of sport at the highest level.

There are a few centres that specialise in the Olympic movement. Besides the Olympic archives and museum run by the International Olympic Committee in Lausanne, there is for instance the International Centre for Olympic Studies at the School of Kinesiology of the University of Western Ontario, London, Canada. This is a research, resource and service facility which aims to encourage, generate and disseminate scholarship on a broad range of social and cultural themes related to the Olympic Movement. Also the Centre d'Estudis Olímpics (CEO-UAB) at the Universitat Autònoma de Barcelona collaborates with the International Olympic Movement and with the various national and international sports organisations, to conduct research into Olympism and sport. The German Sports University in Cologne with its Olympic Studies programme and its Carl-Diem-Archive can be seen as another such institution. There are several centres in areas connected with sport history, specifically concerned with traditional sports and games. For example, the Vlaamse Volkssport Centrale, Sportmuseum Vlanderen, Leuven, Heverlee, Belgium which organises and promotes traditional games.

In Austin, Texas, the H.J. Lutcher Stark Center for Physical Culture and Sports is a recognised research centre within the Department of Kinesiology and Health Education and the College of Education at the University of Texas in Austin. The centre has two main divisions: a research library and exhibition galleries including The Joe and Betty Weider Museum of Physical Culture (<http://www.starkcenter.org>).

In addition, there are centres and/or working groups for sport history embedded in faculties/institutes of sport sciences, like the working group for current GDR sport history at the University of Potsdam. There are also a number of museums, archives and documentation centres all over the world with a focus on sport history, including the Institute for Sport History of Lower Saxonia in Hoya and the Baden-Württembergische Institut für Sportgeschichte, both in Germany.

2.3. Specialised International Degree Programmes

- International PhD Summer School organised by the sports department of the University of Copenhagen every summer. Contact: Gertrud Pfister (gpfister@ifi.ku.dk)
- M.A. Olympic Studies, German Sports University in Cologne (www.dshs-koeln.de).

3. Information Sources

3.1. Journals

Presently, there are several national and international journals in the area of sport history, including:

- *European Studies in Sports History*
- *Idrætshistorisk Årbog*

- *Journal of Olympic History*
- *Journal of Sport History*
- *Ludica*
- *NIKEPHOROS. Zeitschrift für Sport und Kultur im Altertum*
- *NINE: a Journal of Baseball History and Social Policy Perspectives*
- *Olympika*
- *Skiing Heritage*
- *Soccer and Society*
- *Sport et Sciences Sociales*
- *SportZeit*
- *Sportimonium*
- *Sporting Traditions. Journal of the Australian Society for Sports History*
- *Sport History Review*
- *Sport in History (formerly The Sports Historian)*
- *Sport und Gesellschaft. Zeitschrift für Sportsoziologie, Sportphilosophie, Sportökonomie, Sportgeschichte*
- *Stadion*
- *The International Journal of the History of Sport.*

Articles on sport history are also published in inter-disciplinary journals of sport sciences or sports studies or in journals of other disciplines.

3.2. Reference Books, Encyclopaedias, etc.

- Christensen, K., Guttman, A., and Pfister, G. (Eds.). (2001). *International Encyclopedia of Women and Sport*. Berkshire, MA: ABC-Clio.
- Cox, R., Jarvie, G., and Vamplew, W. (Eds.). (2000). *Encyclopedia of British Sport*. Oxford: ABC Clio.
- Cox, R. W. (2003). *History of Sport: A Guide to Historiography, Research Methodology and Sources of Information*. London: Frank Cass.
- Findling, J. E., and Pelle, K. D. (Eds.). (2004). *Encyclopedia of the Modern Olympic Movement*. Westport, CT: Greenwood Press.
- Krüger, M., and Langenfeld, H. (Eds.). (2010). *Handbuch Sportgeschichte*. Schorndorf: Hofmann.
- Pope, S., and Nauright, J. (Eds.). (2010). *Routledge Companion to Sports History*. New York: Routledge.
- Levinson, D., and Christensen, K. (Eds.). (2005). *International Encyclopedia of World Sport. III Volumes*. Santa Barbara, Denver, Oxford: ABC-Clio.

References to contextualise sport history are:

- Coakley, J. (2001). *Sport in Society: Issues and Controversies*, 7th ed, ch. 3. New York: McGraw Hill.
- Horne, J., Tomlinson, A., and Whannel, G. (1999). *Understanding Sport: An Introduction to the Sociological and Cultural Analysis of Sport*, chs. 1-3. London: E and FN Spon.

3.3. Book Series

Sport in the Global Society Series edited by J.A. Mangan, published by Taylor and Francis.

Studien zur Geschichte des Sports edited by M. Krüger, published by LIT.

Espace et temps du sport edited by Jean Saint Martin and Thierry Terret, published by L'Harmattan

3.4. Congresses/Workshop Proceedings

All of the above mentioned associations conduct conferences. Proceedings of sport historical seminars and congresses and yearbooks are published, among others, by ISHPES, European Committee for Sports History (CESH), International Society of Olympic Historians (ISOH) and Australian Society for Sport History (ASSH), dvs Sektion Sportgeschichte of the Deutsche Vereinigung für Sportwissenschaft.

3.5. Data Banks

Sport historical research is integrated into databases of sport and sport sciences. Some important databases include:

- www.la84foundation.org/ La84Foundation
- www.bisp-datenbanken.de Bundesinstitut für Sportwissenschaft in Bonn, Germany
- <http://sportinfo.ning.com> International Association for Sports Information
- *Sportdiscus* Sport Information Centre, SIRC, Canada.

3.6. Internet Sources

- ISHPES is involved in H-Net Online Humanities and Social Sciences (www.h-net.org). Here, a category called H-Sport can be found at <http://www.h-net.org/~sport/>.
- Sources for archives, associations, museums, publishers and many other types of information is the Scholarly Sport Sites organised by Gretchen Ghent www.ucalgary.ca/lib-old/ssportsite/
- Other helpful webpages include:
- Deutsche Arbeitsgemeinschaft von Sportmuseen, Sportarchive, Sportsammlungen e.V. <http://www.dag-s.de/>
- Higher Academy Network for Hospitality, Leisure, Sport and Tourism Network www.heacademy.ac.uk/hlst/resources/guides/guides_sport
- Hickok Sports www.hickoksports.com/history.shtml
- How To Find Out History of Sport www.sprig.org.uk/htfo/htfohistory.html
- Sportspages <http://www.sportspages.com/>

- ISHPES www.ishpes.org
- International Sports Heritage Association (ISHA) www.sportsheritage.org

4. Appendix Materials

4.1. Terminology

Internationally, there are slightly different meanings of certain terms that can lead to misunderstanding in academic discussion. This refers to the 'location of sport history' in the overall academic field. For instance, in German speaking countries, sport history is part of the general term 'sport science'. There is no differentiation between science and humanities with only one term for both approaches to knowledge. In English speaking countries, lately the term 'sport studies' has become popular, with humanities, such as sport history, part of this field. Sport science, in this meaning, would be applied to natural sciences disciplines, such as exercise physiology, biomechanics, etc. Also, the term 'sport' itself is used differently in various countries. In Europe, 'sport' is a very broad term for physical activities of all kinds and on all levels. Clarification on these issues is therefore necessary in publications and international research or discussions. Last but not least there is a discussion concerning whether the singular term 'sport history' or the plural 'sports history' should be used.

4.2. Position Statements

H-Net Online. Humanities and Social Sciences (www.h-net.org).

Free Statement

On one hand, a rise in the level of interest in sport history can be seen. This is reflected in many exhibitions and sport museums, the number of which is rising, along with the number of sport historical journals and scholars outside the field of sports studies or sport sciences. On the other hand, academic sport history in traditional physical education departments is slowly declining in many countries. Among the barriers and problems that sport history has to face is a lack of financial resources.

SPORT PEDAGOGY

Maria Dinold and Michael Kolb

1. General Information

1.1. Historical Development

Sport pedagogy is one of the fundamental sport sciences, which has its origins in the 19th century when significant debate about teaching and practices within physical education as gymnastics, exercise and rehabilitation, games and sports took place. At this time, several European countries such as Denmark, Sweden, Germany and Great Britain each established their own practices within school physical education. Diffusion of these systems travelled to all parts of the world and was established in the latter half of the century. The term 'sport pedagogy' was first noted in Pierre de Coubertin's famous book, *Pédagogie Sportive* in 1925. Indeed the early pioneers of the Olympic Movement (de Coubertin, Gebhardt, Guth, Kemeny) highlighted physical education as 'character building' through Olympic Principles that often had been translated as 'sport education'. The term 'pédagogie sportive', however, was not readily assimilated in France by physical educators, since they preferred the Lingian approach to gymnastics and were opposed to sports or became supporters of their own system, 'la methode française'.

In the German translation of de Coubertin's book (1928), the term '*Sportpädagogik*' was introduced. However, it was not until the end of the 1960s that the term '*Sportpädagogik*' became common in German discourses. This was due to the paradigmatic shift from 'teaching physical education' to 'sport instruction', partially launched by cold war politics of competitive sport (Hardman and Naul, 2002). At the time, the name of the school subject in Germany changed from 'Physical Education' to 'Sport' and the name of the theory of 'physical education' to 'sport pedagogy' (Grupe, 1984).

Within the aforementioned socio-historical context, the implementation of the term 'sport pedagogy' in Germany was felt necessary in order to delineate a scholarly field that focused on more than just school physical education, namely on all educational interventions in different settings and for specific target groups in the domain of human movement and sport. Over the past decades, the focus of sport pedagogy has expanded from children to all ages and abilities (pre-school through to the elderly, disabled through to the elite), and from the school environment to other institutions in the community and work place.

In other regions, such as the rest of Europe and North America, the term was not readily recognised until the 1970s. However, today it is more often suggested the label 'sport pedagogy' be used for a complex body of knowledge which is neither restricted to sports matters nor linked only to school physical education, but has its focus on the arrangement of physical activity and sport for children, young people, adults and elderly people.

1.2. Function

Sport pedagogy describes the disciplined inquiry of physical education teaching and sport coaching from different theoretical perspectives. In order to accomplish this function, sport pedagogy carries out three interdependent research tasks: (1) a hermeneutic research task, dealing with the ideological clarification of the relationships between fundamental conceptions, objectives and quality criteria of sport educational practices; (2) a descriptive-explanatory research task, dealing with the description and explanation of empirical relationships between presage, process, product and context variables of sport educational practices; and (3) an evaluative research task, dealing with design, controlled implementation and evaluation of sport educational programmes (Crum, 1986).

1.3. Body of Knowledge

In recent years, the body of knowledge produced in sport pedagogy has grown rapidly. For the most part, the early focus of sport pedagogy was on school physical education and thus the body of knowledge reflected that setting. More recently, knowledge about teaching and coaching in non-school settings has emerged. Three general areas of focus and investigation can be distinguished: (1) teachers, teaching and coaching; (2) teacher and coach education; and (3) school curriculum for physical education.

While research in German speaking countries has generally dealt more with anthropological assumptions, justification and objectives, and has generally followed a hermeneutic paradigm (Grupe and Krüger, 1996), North American sport pedagogy research has focused more on an empirical paradigm with description and explanation of the content and delivery of student's perspectives toward the physical education subject (Schempp, 1996). However, a number of issues have been at the centre of both research traditions. These issues include: 'curriculum' (Cothran and Ennis, 1998; Stibbe and Aschebrock, 2007); 'teaching styles' (Bielefelder Sportpädagogen, 2007; Mosston and Ashworth, 1990; Wolters, Ehni, Kretschmer, Scherler and Weichert, 2000); 'teacher cognition' (Griffey and Housner, 1996; Miethling and Gieß-Stüber, 2007); 'teacher socialisation' (Fejgin, Ephraty and Ben-Sira, 1995); 'teacher-student interactions' (Martinek, 1996; Miethling and Krieger, 2004); 'students' knowledge' (JTPE Monograph, 2001); 'students' perspectives' (JTPE Monograph, 1995); 'social learning'; 'teacher education'; and 'teacher induction'.

In France, 'didactics of physical education' has become an important research thrust. Didactics investigate the nature of instructional delivery (Amade-Escot, 2000; Gréhaigine, Godbout and Bouthier, 2001). Sport pedagogy research is carried out in many countries throughout Europe, e.g., University of Liège and University of Brussels (Belgium), University of Jyväskylä (Finland), Technical University Lisbon (Portugal) and University of Loughborough (UK) and others.

The body of knowledge in sport pedagogy has expanded in the 1990s to include national and international studies on the status of school physical education (Hardman and Marshall, 2000, 2009; Pühse and Gerber, 2005), children's health-related fitness (Feingold, 2000; Schmid, 2008), active lifestyles and youth sport (Armstrong and Welsman, 1997; Brettschneider and Kleine, 2001); determinants of physical and psycho-social health behaviours (Dale, Corbin and Dale, 2000; McKenzie, Marshall, Sallis and Conway, 2000; Biddle and Mutrie, 2001), as well as socio-cultural development (Hellison, 1995; O'Sullivan, 1994; Silverman and Ennis, 1996).

Recently, sports pedagogy has branched into new topics. Among them, violence prevention through sport (Brettschneider, Brandl-Bredenbeck and Hofmann, 2005) and intercultural learning in the field of physical activity and sport (Gieß-Stüber, 2005). In the area of school physical education, the development of school profiles related to sport and with respect to full-time schools (Hummel and Schierz, 2006; Böcker and Laging, 2010; Fessler, Hummel and Stibbe, 2010) has become an important issue.

In addition, greater recognition of areas of study include adapted physical education/activity (DePauw and Gavron, 2005; Steadward, Wheeler and Watkinson, 2003; Sherrill, 2004; Winnick, 2011), gender (Gieß-Stüber, 2006; Hartmann-Tews, 2006), cross cultural studies about sport and movement (Brettschneider and Brandl-Bredenbeck, 1997; Telama, Naul, Nupponen, Rychtecky and Vuolle, 2001); and 'Olympic Education' as a focus to teach to moral standards like fair play and fairness at school and sport clubs as well as doping prevention (Kidd, 1996; Naul, 2008; Singler and Treutlein, 2001).

1.4. Methodology

To account for the differences between basic theoretical assumptions in paradigms of sport pedagogy, there is a variety of approaches, both quantitative and qualitative. While in the German tradition the 'geisteswissenschaftliches' paradigm with its hermeneutic-phenomenological and interpretative (qualitative) methods still dominates (Prohl, 2006), in North America, a strong emphasis on a behavioural paradigm with an empirical-analytical methodology has developed. In the past 15 years, however, there appears to be a greater increase in qualitative research. Both qualitative and quantitative research approaches thrive equally well and provide insight into determining behavioural and attitudinal changes as a result of pedagogical or curricular interventions, e.g., utilisation of diary review, essay analysis, case study, etc., which have become more prevalent (Kirk, McDonald and Tinning, 1997). Many researchers recognise that there is great complexity when studying the human being as they encounter physical education and the movement environment. In the United Kingdom, Australia, Germany and North America, reflective approaches of a more critical, feminist and post-structuralist perspective have emerged. (Fernández-Balboa, 1997; Kirk, Macdonald and Tinning, 1997).

1.5. Relationship to Practice

In the past, sport pedagogy was limited to a prescriptive theory (theory of practice), which could be applied within the school physical education and sport coaching context. Today, sport pedagogy not only consists of descriptive-explanatory theories, but also relates to all forms of physical activity for all abilities, genders and age in both formal and informal settings. Therefore, sport pedagogy is related, not only to school physical education and elite athlete performance, but also to community recreation, work-site centres and sports clubs, senior activities as well as programmes for people with disabilities and 'sport for all'.

Aside from the extensive connection of sport pedagogy to practice, sport pedagogy as a field of scholarly inquiry includes studies not directly related to practice, such as curriculum histories and lifestyle analyses (Piéron et al., 1996), and teaching culture analyses (O'Sullivan, 1994), normative and ethical standards, values in education and quality management of physical education in autonomous local school programmes (cf. European Academy of Sport, 2001).

1.6. Future Perspectives

Over the past decade, an extensive body of knowledge relative to the function of sport pedagogy (to inform and improve practice) has pointed to the complexity of the field, and the complexity in the study of interactions between educator and learner within the variety of contextual factors. Also, the focus of expansion in sport pedagogy beyond the school-aged population to all ages and abilities has brought forth additional issues and research methodologies that affect one throughout one's lifestyle.

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2. Organisational Network

2.1. Major International Organisations and Networks

The following five member associations of ICSSPE represent the field of sport pedagogy at the international level and constitute the International Committee of Sport Pedagogy (ICSP):

1. AIESEP (Association Internationale des Ecoles Supérieures d'Education Physique), a network organisation of higher education institutes in physical education, but also offering individual memberships to scholars in sport pedagogy
2. FIEP (Fédération Internationale d'Education Physique), supporting sport pedagogical research but more practically oriented in promoting physical education in schools around the world
3. IAPESGW (International Association of Physical Education and Sport for Girls and Women), dealing with sport pedagogical issues concerning women and girls both from a scientific and practical point of view
4. IFAPA (International Federation of Adapted Physical Activity), concerned with related problems among people with disabilities and
5. ISCPES (International Society of Comparative Physical Education and Sport), an international society for research and teaching comparative physical education and sport pedagogy but also including cross cultural aspects of the history, sociology and psychology of sports.

In the network of the International Council of Health, Physical Education, Recreation, Sport and Dance (ICHPER SD), there are continental sub-divisions in Europe, Africa, Asia, and North America in which special interest groups (SIGs) represent physical education and sport pedagogy as well.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Well-known at the regional level are the sub-divisions of the International Council of Health, Physical Education, Recreation, Sport and Dance (ICHPER SD). A new division that has recently emerged is the African Association of Health, Physical Education, Recreation and Dance (AFAHPER-SD). Focusing on

the comparative domain, a new body has been instituted in Asia, the Asian Society of Comparative Physical Education and Sport (ASCPES) and in Europe, the European College of Sport Science (ECSS) attracts scholars from the field of sport pedagogy. Furthermore, several national physical education teacher associations have merged into the European Union of Physical Education Associations (EUPEA).

There are several international research units at universities around the world (e.g., USA, UK, Australia, Finland, Belgium, Portugal, Germany, Japan) and specialised research centres that are affiliated to a university but function at a governmental level, such as the Center for Disease Control, Atlanta, Georgia or the Tucker Centre for Research on Girls and Women in Sport. Others operate similarly but at non-governmental levels, e.g., LIKES - the Foundation for Sport and Health Sciences in Jyväskylä.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

A variety of journals exist across all continents, focusing on sport pedagogical research and theory and also on the practical aspects of teaching and coaching. Compared with other disciplines of the sport sciences, specific journals of sport pedagogy on an international level have a shorter tradition, yet, there is a number of research and theory oriented journals:

- *Journal of Teaching in Physical Education*
- *QUEST*
- *Sport, Education and Society*
- *European Physical Education Review*
- *Physical Education and Sport Pedagogy* (until 2004, called the *European Journal of Physical Education*).

In German language, the general sport scientific journals *Sportwissenschaft* (German Journal of Sports Science) and *Spectrum der Sportwissenschaften* (Journal of the Austrian Sports Science Society) are important outlets for the publication of sport pedagogical research and theory. In France, the *Science et Motricité* (De Boeck Université, F) has been published since 1987.

The *International Journal of Physical Education* is a review journal of sport pedagogy. Additionally, there are a number of other journals (more or less continental based) in which sport pedagogy articles occasionally appear: e.g., *African Journal of Physical Education, Recreation and Dance*, and the *Asian Journal of Physical Education*.

Another journal is that of the International Society of Comparative Physical Education and Sport, called *International Sport Studies*, which provides a cross-continental comparative exchange of knowledge on physical education and sport as well as sport pedagogy.

In many countries, national physical education teacher associations publish journals directly devoted to informing teachers and coaches. A few examples include:

- *Journal of Physical Education, Recreation and Sport and Strategies: A Journal for Physical and Sport Educators* (United States)
- *British Journal of Physical Education* (UK)
- *Sportunterricht* (Germany)
- *Sportpädagogik* (Germany)
- *Bewegungserziehung* (Austria)
- *Education Physique et Sport* (France)
- *Science and Hyper* (France)
- *Japanese Journal of Physical Education* (Japan)
- *Canadian Journal of Health, Physical Education and Recreation* (Canada)
- *Healthy Lifestyles Journal* (Australia)
- *Boletim da Sociedade Portuguesa de Educação Física* (Portugal).

3.2. Reference Books, Encyclopaedias, etc.

A specific reference on sport pedagogy has yet to be published, however, there are encyclopaedic-type texts in sports science with overviews of sport and pedagogy and related research methods, which provide information about physical education, selected themes in sport pedagogy and related research methods.

These include:

Beashel, P., and Taylor, J. (Eds.). (1996). *Advanced Studies in Physical Education and Sport*. London: Nelson.

Haag, H., and Hummel, A. (Eds.). (2001). *Handbuch Sportpädagogik*. Schorndorf: Hofmann.

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Silverman, S., and Ennis, C. (1996). *Student Learning in Physical Education*. Champaign, IL: Human Kinetics.

In addition, many national text books have been published which provide sources and documentation on the body of knowledge of sport pedagogy:

Balz, E., and Kuhlmann, D. (2003). *Sportpädagogik. Ein Lehrbuch in 14 Lektionen*. Aachen: Meyer and Meyer.

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Riordan, J., and Jones, R. (Eds.). (1999). *Sport and Physical Education in China*. London: Spon.

3.3. Book Series

Important book series have been published by some national, professional associations or sport science associations like the American Association of Health, Physical Education, Recreation and Dance (AAHPERD), the Physical Education Association of the United Kingdom, the AFRAPS (France) and the Deutsche Vereinigung für Sportwissenschaft (dvs) in Germany, as well as by some international publishing houses.

3.4. Congress/Workshop Proceedings

The International Committee of Sport Pedagogy (ICSP) was established in 1984 and its members have organised annual and/or biennial conferences and congresses at regional, continental and global levels. Since 1963, AIESEP, for example, has published more than 35 volumes of conference proceedings edited by the local conference organisers and published around the world. Since 1978, ISCPES has regularly published volumes of conference proceedings with Human Kinetics, Meyer and Meyer and FIT (Fitness Information Technology). Some proceedings of the Pre-Olympic Scientific Congresses have also been published and contain documentary sections or chapters on symposia and workshops with a sport pedagogy focus.

3.5. Data Banks

No specific data banks exist for sport pedagogy. Valuable sources are available in the 'SIRC-SPORTSearch' data bank in Canada (<http://www.sirc.ca>), in ViFa Sport (<http://vifasport.de>) and at the German Federal Sport Science Institute in Bonn with 'Spolit' BISp-Recherchesystem Sport (<http://www.bisp-datenbanken.de>). Many descriptors in the field of physical education for international literature searches exist, however, the lack of some special descriptors render the body of knowledge in sport pedagogy incomplete.

3.6. Internet Sources

Multilingual

SportQuest

<http://www.sirc.ca> - SPORTQuest is an important 'first stop' for sport, sport science and physical education information on the web. This site contains high quality links in many languages. It is produced and updated by the Sport Information Resource Centre (SIRC) in Canada. Physical education is included in the 'List of Topics' under 'Sport Science'.

In English

- Physical Education - The Role of Physical Education and Sport in Education (SPINED) – <http://spined.cant.ac.uk> – SpinEd is an international research project commissioned by the International Council for Sports Science and Physical Education (ICSSPE) and funded by the International Olympic Committee (IOC). The project aims to gather and present evidence regarding the benefits of quality Physical Education and Sport to schools. In addition, the website provides international academic references and relevant links
- PE Central – <http://www.pecentral.org/> - A comprehensive resource with a wide variety of links to other internet sites
- Physical Education Digest – <http://www.pedigest.com/> - A 36-page quarterly magazine that provides the latest ideas, tips, coaching cues and research on sports, fitness and physical education topics from around the world, condensed into brief, easy-to understand articles
- Listserves in Physical Education/Physical Activity – Physical Activity and Public Health On-Line Network - PHYS-ACT@VM.SC.EDU
Australian Physical Education Discussion Listserve - Austpe-l@hms.uq.edu.au

In French

- Les listes de diffusion francophones – <http://www.fcomte.iufm.fr> - Rubrique 'Recherche': e-journal de la Recherche sur l'Intervention en Education Physique et Sports (eJRIEPS) is now available on the web.

In German

- Physical Education - Sportpaedagogik Online – <http://www.sportpaedagogik-online.de> - Das Internet als sportpädagogisches Nachschlagewerk und Diskussionsforum.

4. Appendix Material

4.1. Terminology

No recent publications on terminology for sport pedagogy have been published. There is just the *Dictionary on Sport, Physical Education and Sport Science*, which provides full text in English and 10 other languages: Haag, H., and Haag, G. (2003). *Dictionary: Sport – Physical Education – Sport Science*. Kiel: ICS.

4.2. Position Statements

There are several position statements, ranging from the UNESCO charter of Physical Education (1978), to the World Summits on Physical Education (Berlin, November, 1999; Magglingen, December 2005; www.icsspe.org) complemented with the ICSP declarations of support for school physical education. In addition, FIEP has published 'A new concept of Physical Education' (2000/2001). Ongoing development work is being undertaken to create an International Position Statement on Physical Education. An outcome of the first Global Forum for Physical Education Pedagogy (GoFPEP 2010) was a Consensus Statement entitled *Health and Physical Education Pedagogy in the 21st Century* (<http://globalpeforumgc.org/consensus-statement>).

SPORT PHILOSOPHY

Mike McNamee

1. General Information

1.1. Historical Development

The International Association for the Philosophy of Sport (IAPS) is the only international, scholarly agency explicitly and exclusively devoted to the subject. The Association was established in Boston, USA, on 28 December, 1972, as the Philosophic Society for the Study of Sport (PSSS). It has staged annual meetings across the world since 1973.

1.2. Function

The philosophy of sport is concerned with the conceptual analysis and interrogation of key ideas and issues of sports and related practices. At its most general level, it is concerned with articulating the nature and purposes of sport. The philosophy of sport not only gathers insights from the various fields of philosophy as they open up our appreciation of sports practices and institutions, but also generates substantive and comprehensive views of sport itself. The philosophy of sport is never fixed: its methods require of practitioners an inherently self-critical conception of intellectual activity, one that is continuously challenging its own preconceptions and guiding principles both as to the nature and purposes of philosophy and of sports.

1.3. Body of Knowledge

Being a form of philosophical discourse, the philosophy of sport embodies the formal and contextual character of philosophy broadly defined. Unlike the natural or biomedical sciences (of sport), philosophers are more apt to generate research that is overtly reflective of its non-theory neutrality. Just as with the humanities and social sciences of sport, intellectual progress can be made in philosophy without presupposing an idea of linear development – or at least largely shared view of cumulative, commensurable knowledge – that is assumed within the natural or biomedical sciences of sport.

The philosophy of sport is characterised by conceptual investigations into the nature of sport and related concepts. It draws upon and develops many of the diverse branches of the parent discipline,

philosophy, and reflects a broad church of theories. It has most specifically interrogated substantive issues in the following sub-fields of philosophy as exemplified within sport and related human activities involving the use of the body in human practices and institutions:

- aesthetics (e.g. can aesthetic sports have objective judging?);
- epistemology (e.g. what does knowing a technique entail?);
- ethics (e.g. what, if anything, is wrong with gene doping?);
- logic (e.g. are constitutive and regulative rules distinct?);
- metaphysics (e.g. are humans naturally game playing animals?);
- philosophy of education (e.g. do dominant models of skill-learning respect phenomenological insights?);
- philosophy of law (e.g. can children consent to performance enhancing drugs?);
- philosophy of mind (e.g. is mental training distinguishable from mere imagination?);
- philosophy of rules (e.g. are sports rules moral in character?);
- philosophy of science (e.g. is it true that only natural sciences of sport deliver the truth?), and
- social and political philosophy (e.g. is commodification destroying elite sports?)

Diversity aside, one philosophical tradition has dominated scholarship: analytical philosophy. This is not to deny that continental philosophy has not developed a sport philosophical literature. Indeed, the labels themselves are somewhat misleading – and both, being traditions of Western philosophy, take no significant account of Eastern philosophy, which has spawned a significant volume of sport philosophical literature, notably in Japan.

Given that philosophical research is internally related to the expression of ideas, the idiom of that expression somewhat shapes the boundaries of what can be said. In contrast to the idea that the biomedical sciences of sport represent a universal language housed in technical rationality ('the' scientific method), philosophers working in the continental tradition have largely developed research within the fields of existentialism, hermeneutics and phenomenology. Although the label is itself driven by geographical considerations (the work emanated from communities of scholars in Continental Europe), one finds philosophers of sport right across the globe working in these traditions. Similarly, analytical philosophy, though the dominant Anglo-American tradition of Western Philosophy is misleading in the sense that some of its founding fathers were indeed from Continental Europe. The drawing of distinctions to represent our experience of the world, however, is common to all schools or traditions of philosophical and sport philosophical endeavour. Given the dominance of the analytic tradition and its closeness to Anglophone philosophy, some words are required in order to make sense of recent developments in the philosophy of sport.

Analytical philosophy emerged as an essentially conceptual enquiry whose aim was foundational. It is often captured in Locke's famous remark about philosophical work being akin to an under-labourer working in the garden of knowledge. As a second-order activity, its central aim was to provide secure foundations for other disciplines by articulating their conceptual geography. Its pre-eminence was captured by the insistence that conceptual work precedes all proper empirical enquiries. Its exponents

were equipped with the analytical tools of dissecting concepts for constituent criteria, drawing conceptual distinctions by their logical grammar and seeking fine-grained differences in their employment. The discipline of philosophy reduced in some quarters to the detailing of ordinary linguistic usages and necessary and sufficient conditions in order to detect the proper meaning of concepts others had to operate with and between. Despite this 'new' direction, there remained a strong sense of continuity here with the ancient past. Philosophers such as Plato and Aristotle were also concerned with marking distinctions, bringing clarity where before there was puzzlement or, worse, commonsensical acquiescence.

Many philosophers argue now that we are in a period of post-analytical philosophy. What this means is not entirely clear. We are living through a period of exciting intellectual development in the subject, which is very much reflected in the philosophy of sport. While careful attention to conceptual analysis will always be an essential component of the philosophers' toolkit, research-driven analyses of the key concepts of sports, games and play, have to a clear extent declined. Of much greater prevalence in the contemporary literature has been the development of substantive axiological issues ranging from social and political philosophy of sport to the rapidly growing field of ethics of sport. Philosophers have been clear about the need to throw off the cloak of apparent neutrality of analytical philosophy in favour of arguing for substantive positions in terms of the 'commodification' of sports, their 'commercialization' and their 'corruption'. The development of substantive normative positions has proceeded in addition, rather than in opposition, to the careful articulation of precisely what those concepts logically entail. If these debates have also raged in the social scientific literatures, then it is clear that academics in this portion of the philosophy of sport have made their own important contributions, premised on a clear understanding of the potentially diverse conceptualizations of sport. Similarly, in ethics, philosophers of sport have attempted to argue for the aptness of different moral philosophical theories to capture sports' nature and the nature of sporting actions therein. In these fields, philosophers have generated new ideas about the contested nature of sports ethics itself – whether as contract, or duty/obligation, or utility, or virtue. In doing so, they have often connected with the empirical research of other bodies of knowledge that would have been unimaginable to the 'ordinary language philosophers' who saw themselves neutrally dissecting the linguistic usage of key concepts over the last 50 years.

1.4. Methodology

Although early analytical philosophers saw themselves elucidating the concepts others used in their sports talk and research, there is a clear sense in which we can say the empirical researchers of the natural and social sciences and the humanities have themselves become much more sophisticated in their conceptual approaches to sports related research. One of the traditional roles of the philosophers of sport, that is, to clear the conceptual ground for others to carry out their research,

has diminished, though it is never likely to disappear altogether. In politics, as in ethics and other branches of study, there will always be disputes about what constitutes 'democratic processes' or 'good character', for these debates cannot be eliminated from the field itself. Yet the convergence of the conceptual and empirical cuts both ways.

Philosophers of sport themselves are paying much greater attention to the processes and outcomes of empirical research. Nevertheless, their focus remains exclusively conceptual in character. Every philosopher worthy of the name still seeks to get things right – even if there is no clear and undisputed sense of what the truth of matters might be. Its task is, through dialogue, to aim at the truth by close attention to valid argumentation entailing the clear explication of ideas that aim towards truth. In this sense, philosophy does not try to be pure, nor do philosophers of sport attempt to view sports as if they were in a position of complete neutrality, as is presupposed in positivistic research. The old philosophical ideal of philosopher as an ideal spectator embodies a view of sports worlds from nowhere in particular within those worlds. Such a view has largely disappeared in contemporary philosophy of sport. In a clear sense, then, philosophy is returning to its ancient promise to bring wisdom to bear on important matters that concern us (in sports) and not merely to the detailed technical analysis of key concepts.

1.5. Relationship to Practice

The diversity of practices that fall within the compass of different schools and traditions of philosophy means that there is not a universal method to characterise the philosophy of sport. It is impossible, therefore, to state unequivocally what relations hold between philosophizing and practice. While there will always be a portion of philosophical scholarship in sport that is more abstract (whether in the analytical, Continental or Eastern traditions), there is a growth of more applied work in the fields of axiology.

Increasingly, philosophers are making contributions to national and international sports policy development, along with pressure groups where the need for the knowledge and skills of argumentation philosophers characteristically bring to bear on challenging normative issues is clear. Examples of such applied work include research into diverse conceptions of equity in operation with respect to categories such as gender and race; arbitrating between proper and improper means of performance enhancement and genetic engineering; linking the shared terrains between philosophy of sport and other social practices such as medicine or other key identity constituting aspects such as disability; and illuminating the fascistic tendencies of elite sports or the xenophobia of modern sporting nationalism. Many of these issues would have been unthinkable to philosophers 50 years ago but are increasingly becoming part of the standard work of philosophers of sport.

1.6. Future Perspectives

Given the breadth of scholarship and research across the Association, it is not possible to specify definitive directions that will apply to all future research. Nevertheless, it is clear to say that the ethics of doping remains the most widely discussed issue in the philosophy and ethics of sports. Moreover, there appears to be an increasing trend back towards aesthetic and phenomenological enquiries in sports. There is evidence of greater multi-disciplinary collaboration between philosophers and social and natural scientists interested in sports. Recent special issues within the field's journals interrogate issues in the ethics of sports medicine; disability sports; Olympism as a philosophy of sport and life; and a consideration of the scholarship of Bernard Suits whose ground breaking book *The Grasshopper* in 1967 significantly helped to establish the field.

2. Organisational Networks

2.1. Major International Organisations and Networks

IAPS has worldwide membership. It has both held meetings and/or has had representation regularly at the World Congress of Philosophy. It is a member of the International Council of Sport Science and Physical Education (ICSSPE) and the Fédération Internationale des Sociétés de Philosophie.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Regional/continental affiliates of the IAPS are now under development in East Asia, Oceania/Southeast Asia, Central/Southern/Eastern Europe, United Kingdom/Ireland and Scandinavia.

National Level

Japan has a long standing, formally developed, national organisation devoted to the philosophy of sport. The British Philosophy of Sport Association was instituted in 2002 (www.philosophyofsport.org.uk/) which, because of the active involvement of scholars across Continental Europe, spawned the European Association for the Philosophy of Sport (<http://www.philosophyofsport.eu/>), which meets triennially (since 2008). In North America, regular meetings have been held in Canada and the USA. In the United States, the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) has a group devoted to Sport Philosophy - the Academy of Sport Philosophy under NASPE (National Association for Sport and Physical Education). The Academy of Sport Philosophy is represented with lectures, workshops and symposia during the annual

AAHPERD meetings and publishes in the AAHPERD sponsored journals *Research Quarterly* and *JOPERD (Journal of Physical Education, Recreation and Dance)*. In Germany, there is a Sektion Sportphilosophie of the Deutsche Vereinigung für Sportwissenschaft (DVS). Other countries have similar organisational patterns at the National Level.

Specialised Centres

The major centres for advanced study and research (in alphabetical order) in the philosophy of sport are:

- Department of Exercise and Sport Science, Pennsylvania State University, University Park, Pennsylvania, USA
- Department of Philosophy, Trinity College, Hartford, Connecticut, USA
- Department of Philosophy, Texas Christian University, Fort Worth, Texas, USA.
- College of Human and Health Sciences, Swansea University, Wales, UK
- Department of Physical Education and Recreation, Victoria University of Technology, Melbourne, Victoria, Australia
- Department of Physical Education and Sport, State University of New York College at Brockport, Brockport, New York, USA
- Deutsche Sporthochschule Köln, Cologne, Germany.
- Division of Health, Physical Education, Recreation, and Dance, Center for Ethics, University of Idaho, Moscow, Idaho, USA
- Faculty of Human Movement Sciences, Vrije Universiteit, Amsterdam, the Netherlands
- Faculty of Kinesiology, University of Western Ontario, London, Ontario, Canada
- Institut für Sportwissenschaft, Freie Universität Berlin, Berlin, Germany
- Institute of Health and Sport Sciences, University of Tsukuba, Tsukuba, Japan
- Leisure and Sport Research Unit/School of Sport and Leisure, University of Gloucestershire, England
- Nippon College of Education, Tokyo, Japan
- Norwegian University of Sport Sciences, Oslo, Norway
- School of Sport, University of Wales Institute Cardiff, United Kingdom
- Stockholm Bioethics Centre, University of Stockholm, Sweden.

2.3. Specialised International Degree Programmes

Not Applicable.

3. Information Sources

3.1. Journals

Philosophers of sport have tended to publish their research in a wide variety of outlets from scientific to professional journals. Many philosophers have published their work in national and international multi-disciplinary journals on sport. Equally, it is very common for philosophers to publish in national and international social scientific sports journals. IAPS' own publication is the *Journal of the Philosophy of Sport* (www.humankinetics.com/JPS/journalAbout.cfm), which has been published annually since 1974, and bi-annually since 2001. It is currently edited by Prof. John Russell. In addition, the British Philosophy of Sport Association has produced its own journal, *Sport, Ethics and Philosophy* since 2007, which is published four times per year (www.tandf.co.uk/journals/authors/rsepauth.asp). Its editor is Professor Mike McNamee. Both journals are double blind refereed and internationally indexed.

3.2. Reference Books, Encyclopaedias, etc.

The philosophical literature concerning sport is extensive. Historically important and significant contemporary books in the field notably include the following:

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- Caillouis, R. (1961). *Man, Play, and Games*. New York: Free Press.
- Dombrowski, D. (2010) *Contemporary Athletics and Ancient Greek Ideals*. Chicago, IL: University of Chicago Press.
- Eichberg, H. (2009). *Bodily Democracy*. Abingdon: Routledge.
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- Loland, S. (2001). *Fair Play: A Moral Norm System*. London: Routledge.
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- McFee, G. (2003). *Sport, Rules and Values*. London: Routledge.
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- Martinkova, I, and Parry, S. J. (2012) *Phenomenological Approaches to Sport*. Abingdon: Routledge.
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- McNamee, M. J. (2008). *Sports, Virtues and Vices*. London: Routledge.
- McNamee, M. J., and Møller, V (2011). *Doping and Anti Doping Policy: Ethical, Legal and Social Perspectives*. Abingdon: Routledge.
- McNamee, M. J. (2010). *The Ethics of Sports: A Reader*. Abingdon: Routledge.
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3.3. Book Series

A series on philosophical and social scientific ethics of sport is edited by McNamee, M. J. and Parry, S. J. under the title *Ethics and Sport*: <http://www.routledge.com/books/series/EANDS/>

3.4. Congress/Workshop Proceedings

Proceedings of some Annual Meetings of the International Association for the Philosophy of Sport (IAPS), have been published in various forms on an irregular schedule since 1973. IAPS has published a newsletter, tri-annually since 1987: <http://iaps.net/newsletter/>.

3.5. Data Banks

IAPS has published several versions of a comprehensive bibliography concerning the philosophy of sport in its Journal of the Philosophy of Sport, which is periodically updated.

3.6. Internet Sources

Recommended websites for philosophy:

The IAPS web site, containing membership, journal and conference information
<http://iaps.glos.ac.uk/>

University of Idaho, Center for Ethics
www.educ.uidaho.edu/center_for_ethics/

The Philosopher's Magazine
www.philosophers.co.uk

EpistemeLinks.com – Philosophy Resources
www.epistemelinks.com/

Guidebook for Publishing/ Philosophy: Journals
www.smith.edu/~jmoulton/jend.htm

British Philosophy of Sport Association
www.philosophyofsport.org.uk/

4. Appendix Material

4.1. Terminology

See section 2.6 Internet Sources for more information.

4.2. Position Statement

The purpose of the International Association for the Philosophy of Sport is: to stimulate, encourage and promote study, research and writing in the philosophy of sporting (and related) activity; to demonstrate the relevance of philosophic thought concerning sport to matters of professional concerns; to organise and conduct meetings concerning the philosophy of sport; to support and to cooperate with local, national and international organisations of similar purpose; to affiliate with national and international organisations of similar purpose; and to engender national, regional and continental affiliates devoted to the philosophic study of sport (from the Constitution of IAPS).

SOCIOLOGY OF SPORT

Joseph Maguire

1. General Information

The sociology of sport, while grounded in sociology, also encompasses research in history, political science, social geography, anthropology, social psychology and economics. Also, the new off-shoots of sociology such as, cultural studies, postmodernism, media studies and gender studies, are well represented in the field. Sociology of sport is both a theoretically driven and an empirically grounded sub-discipline of sociology. It overlaps with, and is informed by, work on the body, culture and society more broadly. The sociology of sports is also one of the fundamental sport sciences.

1.1. Historical Development

Although the first texts on sociology of sport appeared in the 1920s, this sub-discipline did not develop until the early/mid 1960s in Europe and North America. A small number of scholars from both physical education and sociology formed the International Committee for the Sociology of Sport (ICSS) in 1965.

1.2. Function

The aims of the sociology of sport are:

- to critically examine the role, function and meaning of sport in the lives of people and the societies they form
- to describe and explain the emergence and diffusion of sport over time and across different societies
- to identify the processes of socialisation into, through, and out of modern sport
- to investigate the values and norms of dominant, emergent and residual cultures and subcultures in sport
- to explore how the exercise of power and the stratified nature of societies place limits and possibilities on people's involvement and success in sport as performers, officials, spectators, workers or consumers
- to examine the way in which sport responds to social changes in the larger society
- to contribute both to the knowledge base of sociology more generally and also to the formation of policy that seeks to ensure that global sport processes are less wasteful of lives and resources.

The sociology of sport also seeks to critically examine common sense views about the role, function and meaning that sport has in different societies. By challenging 'natural' and taken-for-granted views about sport, sociologists seek to provide a more social and scientifically adequate account that can inform both the decisions and actions of people and the policy of governments, non-government organisations (NGOs) and sport organisations.

Although, as in sociology more generally, there are several different perspectives from which to examine the relationship between sport, cultures and societies, sociologists of sport do have certain assumptions in common. For example, sociologists, whether they examine the 'micro' or 'macro' aspects of sport, seek to embed their research in the wider cultural and structural context.

In the context of sport sciences, sociologists of sport seek to generate knowledge that will contribute to 'human development' as opposed to 'performance efficiency'. That is, they seek to critically examine the costs, benefits, limits and possibilities of modern sport for all those involved, rather than focus on the performance efficiency of elite athletes. Those sociologists working with sociology departments examine sport much in the same way they would examine religion, law or medicine – to highlight aspects of the general human condition.

Sociology of sport, then, seeks not only to contribute to its parent discipline, but also to changing the sports world. With respect to the latter, research seeks to 'debunk' popular myths about sport, critically appraise the actions of those more powerful groups involved in sport, and critique and inform social policy about sport.

1.3. Body of Knowledge

From the mid-1960s, symposia, conferences and congresses have been held annually and theoretical and empirical work was presented. Researchers from different sociological backgrounds began to develop sociological definitions of sport, conduct pioneering work in different aspects of sport and develop undergraduate, Masters and doctoral courses and programmes. Research areas include sport and socialisation, sport and social stratification, sport subcultures, the political economy of sport, sport and deviance, sport and the media, sport, the body and the emotions, sport violence, sport politics and national identity, sport and globalisation.

On this basis, the sub-discipline has now developed a sophisticated understanding of how people become involved in sport; what barriers they face; and how gender, class, ethnicity and sexual relations work in sport. In addition, scholars have developed considerable knowledge about how sport is mediated, contoured by a complex political economy and bound up in global identity politics.

Over the last 30 years, theoretical and empirically based case studies have been developed on various sports in different societies. The sub-discipline has various edited works, handbooks and textbooks from North America and Europe. Sociology of sport is established in Asia, particularly in Japan and

Korea, and, more recently, scholars from South America have formed their own association (ALESDE - Asociación Latinoamericana de Estudios Socioculturales del Deporte [alesde@ufpr.br]). In addition, colleagues in Africa and Australia are using a sociological perspective to help make sense of the social problems that beset sport, and to understand how sport illuminates wider sociological issues.

1.4. Methodology

The range of research methodologies used in the sociology of sport are the same as those used in sociology and in other social sciences, and are frequently characterised as 'qualitative' and 'quantitative' methodologies. Preferred methodologies have changed over time, and vary by place. Perhaps more importantly, methodologies are often quite distinctly related to the theoretical perspective employed by the researcher. For example, those perspectives that tend to treat data as 'social facts' (e.g., functionalist and Durkheimian approaches) tend to employ quantitative methodologies, e.g., survey research, content analysis, and statistical analysis. Those perspectives that see social data in more relative terms (e.g., symbolic, interactionist and postmodern approaches) tend to employ more qualitative methodologies, e.g., discourse analysis, ethnography and interviews. Many of the critical, Eliasian/figurational and cultural studies perspectives employ a range of methodologies, and select those methods as appropriate to the data being collected, including historical methodologies. In their simplest form, multiple methodologies are employed in order to confirm the reliability of data (e.g. Denzin's triangulation technique). But multiple methods are more often employed because of the complexity of social data, and the recognition that a single method, such as a questionnaire, provides limited insight, in itself, to complex social behaviour.

1.5. Relationship to Practice

Sociology of sport, as noted, seeks to contribute to our understanding of sport and also to inform policy that will make the sports experience less wasteful of lives and resources. Sociologists of sport have sought to achieve this latter aim in several ways, by:

- offering expert advice to government agencies, public enquiries and commission reports on areas such as drugs, violence and health education
- acting as an advocate for athletes' rights and responsibilities
- providing research for groups who seek to challenge inequalities of gender, class, ethnicity, age and disability, particularly with respect to access, resources and status
- promoting human development as opposed to performance efficiency models within physical education and sport science
- encouraging better use of human and environmental resources and thus ensuring that there is a sporting future for generations to come.

1.6. Future Perspectives

Not applicable.

References

Not applicable.

2. Organisational Network

2.1. Major International Organisations and Networks

The sociology of sport is internationally represented by the International Sociology of Sport Association (ISSA, formerly ICSS, founded in 1965), which also publishes the *International Review for the Sociology of Sport*. This body is a research committee of the International Sociological Association (ISA) and also an official member of the Association's Board of ICSSPE.

Currently there are 200 members in ISSA, from different parts of the globe. ISSA holds annual conferences, including congresses in conjunction with the World Congress of Sociology and its own World Congresses held since 2001 in Korea, Germany, Argentina, Denmark, Japan, The Netherlands and Cuba.

As the international 'umbrella' organisation, ISSA, consults with national and regional groups. Some national groups are federated with the national sociological association of that country, or with a sport science/physical education organisation. Either through ISA or ICSSPE, such groups have a direct link to ISSA. There are also regional groups in areas such as Asia and North America. NASSS, the North American Society for the Sociology of Sport, which publishes the *Sociology of Sport Journal*, is the most well known regional group. European researchers are also linked to the European College of Sport Science and the European Association for Sociology of Sport.

ISSA: NEW EXECUTIVE BOARD, 2012-2015

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Vice President (Conferences) - Christopher Hallinan (Australia)

Vice President (ICSSPE) - Cora Burnett (Republic of South Africa)

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Each country has its own sociological association and sociology of sport groups tend to exist as either part of these parent discipline associations and/or in conjunction with sport science organisations.

The University of Waterloo in Canada was the first prominent centre to be associated with the sociology of sport. There are now some long established research centres in North America (e.g., North Eastern University in Boston, University of Illinois); Europe (e.g., the Norwegian University of Sport, Oslo and the University of Jyväskylä, Finland); and Asia (e.g., Tsukuba University, Japan and Seoul National University, Korea). For the most part, research tends to be conducted by smaller groups of scholars, sometimes working as individuals. Centres of excellence include Loughborough University, England, the University of Toronto, Canada, the Norwegian University of Sport, the University of Copenhagen and the University of Otago, New Zealand.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

The number of journals in this area continues to grow. The following are either devoted to sociology of sport or contain a high proportion of papers written from a sociological perspective:

- *International Review for the Sociology of Sport*
- *Sociology of Sport Journal*
- *Journal of Sport and Social Issues*
- *Sport in Society*
- *Leisure Studies*
- *Japanese Journal of Sociology of Sport*
- *Soccer and Society*
- *Football Studies*.

3.2. Reference Books, Encyclopaedias, etc

- Coakley, J., and Dunning, E. (Eds.). (2000). *Handbook Of Sport Studies*. London: Sage.
- Levinson, D., and Christensen, K. (Eds.). (1996). *Encyclopedia Of World Sport: From Ancient Times To The Present*. Santa Barbara, CA: Abc-Clio. 796.03
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- Scambler, G. (2005). *Sport and Society: History, power and culture*. Maidenhead: Open University Press.

3.3. Book Series

Jennifer Hargreaves and Ian McDonald (Eds). *Routledge Critical Studies in Sport*.

3.4. Congress/Workshop Proceedings

- First World Congress for the Sociology of Sport, Seoul, Korea, 2001
- Second World Congress for the Sociology of Sport, Cologne, Germany, 2003
- Third World Congress for the Sociology of Sport, Buenos Aires, Argentina, 2005
- Fourth World Congress for the Sociology of Sport, Copenhagen, Denmark, 2007
- Fifth World Congress for the Sociology of Sport, Kyoto, Japan, 2008
- Sixth World Congress of Sociology of Sport, Utrecht, The Netherlands, 'Passion, Practice and Profit' July 15-18, 2009
- Seventh World Congress of Sociology of Sport, Havana, Cuba, 'Sport and the Winds of Change', July 12-15, 2011.

3.5. Data Banks

- SIRLS (Canada, University of Waterloo).
- <http://www.sportdoc.unicaen.fr/heracles/>
- <http://www.sirc.ca/sportdiscus>

3.6. Internet Sources

Listserve, web sites and bibliographical search centres are developing rapidly. The official internet site for ISSA is <http://www.issa.otago.ac.nz/> For more information, see the following web page for a list of other associations – <http://www.issa.otago.ac.nz/links.php>

See also the following e-mail addresses:

- <isa@sis.ucm.es>
- <sporthist@pdomain.uwindsor.ca>
- <nassserv@listserv.bc.edu>
- <http://u2.u-strasbg.fr/laboaps/index.htm>

The following associations also provide relevant information:

- International Sport and Culture Association www.isca-web.org
- International Society for the History of Physical Education and Sport (ISHPES) www.umist.ac.uk
- Fédération Internationale d'Education Physique (FIEP) www.fiep.org
- International Society for Comparative Physical Education and Sport (ISCPES) <http://iscpes.uwo.ca>
- European Association for Sociology of Sport (EASS) <http://www.eass-sportsociology.eu/>

4. Appendix Materials

4.1. Terminology

See any standard dictionary of sociology.

See also:

Cashmore, E. (2000). *Sports Culture. An A-Z Guide* London: Routledge.

Levinson, D., and Christensen, K. (Eds.). (1990). *Encyclopaedia of World Sport* (3 volumes.). Oxford: ABC-CLIO.

4.2. Position Statements

See ISSA documentation on the role and function of the Association for position statements.

ISSA has also endorsed the Brighton Declaration on Women and Sport.

The three main tasks of ISSA are service, advocacy and research. ISSA seeks to provide a service to members, to represent the interests of sociologists and to develop the field in areas where, at present, the state of sociological knowledge about sport is in its infancy. ISSA is also about advocacy. ISSA attempts to intervene in the Sport Worlds of today – using what influence it has to make such worlds less wasteful of lives and resources. ISSA is also about research – it seeks to create a knowledge base on which to build future Sport Worlds that can be similar to today or which can be made anew. Such worlds can enhance the positive aspects of contemporary Sport Worlds, or they can reinforce, or make worse, what we already experience as negative features. Sociologists of sport therefore have a part to play in approaches to development through sport and in wider United Nations initiatives on sport, culture and society.

Part III.
Academic Disciplines with
Professional Orientation

Academic Disciplines with Professional Orientation represent academic fields, which base their central body of knowledge on practical application in sports professions. The following considerations prove that these are indeed academic disciplines: They have Chair Professorships, Academic Education Programmes, International Organisations, International Scientific Journals, and International Scientific Conferences as well as organisational representation on the World, Continental and National Level. Chapter III lists 12 scientific disciplines as academic disciplines with professional orientation

ADAPTED PHYSICAL ACTIVITY SCIENCE

Claudine Sherrill and Yeshayahu Hutzler

1. General Information

1.1. Historical Developments

Adapted physical activity (APA) science is research, theory and practice knowledge directed toward persons of all ages underserved by the general sport sciences, disadvantaged in resources, or lacking power to access equal physical activity opportunities and rights. APA services and supports are provided in all kinds of settings. Thus, research, theory and practice relate to needs and rights in inclusive (Block and Obrusnikova, 2007), as well as separate APA programmes.

The social construction of the ICSSPE sport sciences (general and adapted) has historically paralleled the division of medical, educational and social sciences into separate knowledge areas and professions. One branch focusing primarily on 'able-bodied' and the other branch on conditions that the World Health Organisation first (2001) categorized as impairments, disabilities and handicaps, and later (1991) as impairments, activity limitations, and participation restrictions. *Disabled*, however, is the preferred term of persons who cope with activity and participation challenges and thus the word used herein (e.g., persons *with disabilities*, *disability sports*, *disability studies*). APA, of course, has changed at different rates across cultures and disabilities. Major reasons for this are: (a) widespread diversity in how disability is defined and fits into various cultures; and (b) insufficient resources to support alternative opportunities and rights (Gladwell, 2000; Ingstad and Whyte, 1995).

From the 1950s onward, in most developed countries, scholarship on specific conditions (e.g., blindness, intellectual disabilities, physical disabilities) intensified, philosophy changed, families became involved, advocacy began, and charitable and government funding expanded. In some countries, disabilities were defined in law that provided funding, assuming that criteria of classification systems were met. Separate organisations also were founded. For example, the first international sports organisation for persons with disabilities (specifically the deaf) was founded in France in 1924. The *disability sport movement*, which began with the rehabilitative use of physical activity with war veterans in the 1940s by British neurosurgeon Sir Ludwig Guttmann, led to establishment of the Paralympic Games for elite athletes. Illustrative of APA research generated by sport was the First International Medical Congress on Sports for the Disabled, held in Norway, in 1980. This congress featured research mainly by physicians who were medical directors of disability sports programmes. Today, almost all international competitions for athletes with disabilities hold research congresses (or the equivalent) in conjunction with their games and continue the tradition of sharing new APA knowledge (Doll-Tepper, Kroner, and Sonnenschein, 2001; Sherrill, 1986; Steadward, Wheeler and Watkinson, 2003).

The history of APA reveals many titles, but today two terms dominate. *Adapted physical education* (APE), first adopted in 1952 in the United States, focuses on school-based services. *Adapted physical activity* (APA), first introduced in 1973 by Canadian and Belgium founders of the International Federation of Adapted Physical Activity (IFAPA), is an umbrella term encompassing physical activity for persons of all ages in rehabilitation, sport, recreation and physical education. The United Nations (UN), from the 1970s onward, influenced APA programmes and research. In 1971 and 1975, respectively, the UN General Assembly adopted the Declaration on the Rights of Mentally Retarded Persons and the Declaration of the Rights of Disabled Persons. The UN-declared International Year of the Disabled (1981) and the International Decade of Disabled Persons (1983-1992) provided visibility, knowledge and motivation to found advocacy groups and actively work toward enactment and enforcement of laws and policies that supported rights. Advocacy thus became a new research area, with law and social policy integrated into APA science. In 2006, the UN passed Article 30.5 of the Convention on Rights of Persons with Disabilities, which stated that persons with disabilities should participate, 'on an equal basis with others in recreational, leisure and sporting activities'. This reflects a trend away from needs-based services toward rights-based opportunities.

1.2. Function

The function of *APA science* is to provide

1. theoretical and practical knowledge
2. highly qualified professionals and practitioners and
3. research-based practices (services, supports, activities and programmes) that focus on physical activity goals, needs, rights and empowerment of persons *of all ages with disabilities* in physical education, sport, recreation and rehabilitation. Individuals with disabilities and the contextual factors affecting their movement performance, as well as social inclusion in physical activities of choice, are extremely diverse. The functions of *APA personnel preparation* in universities is to provide:
 - ◇ introductory courses for generalists
 - ◇ advanced degree specializations for future university faculty, researchers and administrators and
 - ◇ on-going research to increase and maintain our knowledge base.

APA education's specific functions are:

1. pre-service and in-service in universities
2. continuing education in the field, instruction for parents and the community at large and
3. *infusion* practices whereby APA specialists provide generalists with knowledge about disabilities adapted to general subject matter and skills needed to integrate persons with disabilities into their classes or programmes.

Infusion aims to broaden the knowledge base and instructional practices of generalists to better cover individual differences associated with disabilities and enhance supportive attitudes.

1.3. Body of Knowledge

APA science is *cross-disciplinary*, defined as ‘the integration of knowledge from many disciplines in the creation of a distinct, unique body of APA knowledge that focuses on [interrelationships among] adaptation or change processes, individual differences and physical activity’ (Sherrill, 2004, p. 6). *Adaptation* is defined as the ‘art and science, used by qualified personnel, of assessing and managing person-task-environment variables in physical activity services, supports, and interventions designed to meet unique psychomotor needs and achieve desired outcomes’ (Sherrill, 2004, p. 7). The major theory guiding APA practices is Adaptation Theory or Metatheory (Kiphard, 1983; Sherrill, 1995, 2004), which is still under-development. Central phenomena in this metatheory can be identified as:

- ecosystems (individuals interacting with others and with environmental variables) that cope with barriers to success
- physical activity
- service delivery and
- empowerment.

Ecological Task Analysis (ETA) theory (Davis and Broadhead, 2007), Systematic Ecological Modification Approach (SEMA) (Hutzler, 2007), as well as Individualized Education Programme (IEP) (Sherrill, 2004), are models guiding the actual process of selection and management of adaptations within a given context. Adaptive Physical Education professionals in the USA have delineated Adapted Physical Education National Standards (APENS) with specific knowledge, competency and skill capabilities to be demonstrated in the following areas: human development, motor behaviour, exercise science, measurement and evaluation, history and philosophy, unique attributes of learners, curriculum and development, assessment, instructional design and planning, teaching, consultation and staff development, programme evaluation, continuing education, ethics and communication (Kelly, 2006). The European Standards of Adapted Physical Activity (EUSAPA) Manual (Kudlacek, 2011) adds two further domains where unique professional capabilities, skills and competencies are needed and should be developed through appropriate university programmes worldwide.

1.4. Methodology

All APA practice domains are accompanied with research. For example, the sport and recreation domains are being facilitated with applied research that focuses on performance and participation enhancement and classification issues (e.g., Vanlandewijck and Thompson, 2011). In the educational domain types of inclusion and adaptation modalities most effectively working for both participants with and without a disability are actual research foci (Block and Obrusnikova, 2007). Data are retrieved by means of specially developed questionnaires such as the Children’s Attitudes toward Inclusion in Physical Education – Revised (CAIPE-R) (Block, 1995). For screening and control of intervention impact, performance tests are utilised, measuring fitness components (e.g., the Brockport Physical

Fitness Test (BPFT) for use with youngsters with disabilities: Winnick and Short, 1999, and the EUROFIT-special for use in persons with intellectual disability: Skowronski, et al., 2009). For assessment of actual participation, observation methods uniquely developed such as the Peer's interaction behaviours in inclusive physical education (Klavina and Block, 2008), or the Aquatic Independence Measure for assessing aquatic adaptation for children with disability (Hutzler, Chacham, Bergman and Szeinberg, 1998; Getz, Hutzler and Vermeer, 2006). In addition, accurate movement analysis methodologies and sophisticated specialized equipment (SMART^{Wheel}: Cooper, 2010) have been developed for measurement of movement patterns and quantities in wheelchair propulsion.

Both quantitative and qualitative research methodologies are used, with a trend toward mixed methodologies to assure comprehensive results. Extending and adapting existing theory to include disability is emphasised as is developing original theories (Reid, 2000). Data collection techniques are systematically adapted to participants' unique movement and communication abilities. Validation of instruments for specific samples and purposes is necessary.

APA research is especially complex because of the variability of participants and sometimes availability of only small samples. Researchers use both non-parametric and parametric statistics and alternative approaches, such as qualitative research, which includes at least 16 specific sub-types. IFAPA's official research journal *Adapted Physical Activity Quarterly (APAQ)* has published work from over 30 countries during the last decade and is indexed in MEDLINE and other sources. APAQ provides systematic reviews of evidence based research, as well as original data based articles. European Journal of Adapted Physical Activity (EUJAPA) is an open access journal also publishing original APA research, mostly based on graduate student projects. Additionally, IFAPA researchers publish in numerous disciplinary journals throughout the world as well as periodicals devoted to specific types of disabilities. Global trends toward accountability increasingly require that all practices (interventions) be evidence-based or research-grounded, hence prioritizing experimental research.

1.5. Relationship to Practice

Practical applications focus on improvement of *quality of life for all*, not just those with disabilities, through application of APA knowledge at many levels. *Inclusiveness* is facilitated through the elimination of attitudinal, aspirational, architectural, transportation and communication barriers and occurs concurrently in home, school and community environments; for example, by means of *awareness activities* such as the experiencing goalball activity (Reina, López, Jiménez, García-Calvo and Hutzler 2011). *Accessibility to community resources* makes everyone's lives better, especially those of underserved minorities (e.g., elderly, disabled, poor). APA teaches persons to become increasingly independent, productive and self-determined in choosing healthy activity when diverse options and settings are assured. APA science aims toward collaboration between specialists and generalists in all aspects of life that will afford underserved persons equal physical activity opportunity and rights.

1.6. Future Perspectives

The 21st Century has opened opportunities for APA to become a major science, business and education priority. Reasons include:

- the inactivity epidemic has increased dramatically worldwide and at a higher rate among persons with disabilities
- society is aging with longer lifespans and greater needs for health and fitness services at reasonable costs
- society is paying increasing attention to lifelong health behaviours
- APA is grounded in 'healthy' motivational factors not always found in therapeutic settings
- APA has long experience in training multiple task engagement, now accepted as a high priority in exercise training and
- governments and international bodies are increasingly accepting social rights of minorities, including persons with disabilities.

APA is prepared to meet changing needs and provide leadership for cooperation among organisations.

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For others, see Section 2.2.

2. Organisational Network

2.1. Major International Organisations and Networks

The International Federation of Adapted Physical Activity (IFAPA), founded in Quebec, Canada, in 1973, has conducted conferences during odd-numbered years since 1977. Conferences, traditionally called International Symposia on Adapted Physical Activity (ISAPA), have been held in six of seven regions. IFAPA's official research journal is *Adapted Physical Activity Quarterly* (APAQ), published by Human Kinetics. An affiliate of ICSSPE, IFAPA promotes partnerships and collaboration.

The IFAPA Board's 20 voting members are organised as follows:

- *Executive Committee*: President, President-Elect, Past-President, Vice President, Secretary, Treasurer
- *Regional Representatives*: two each from regions with IFAPA-affiliated organisations: Asia, Europe, North America; and one each from other regions: Africa, Oceania, Middle East, South/Central America
- *Resource Specialists*: APAQ Editor, Disability Community Liaison and Student Representative.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Regional Level

IFAPA has seven regions: Africa, Asia, Europe, Middle East, North America, Oceania and South/Central America. Three regions have affiliated organisations:

- Asian Society of Adapted Physical Education and Exercise (ASAPE)
- European Federation of Adapted Physical Activity (EUFAPA)
- North American Federation of Adapted Physical Activity (NAFAPA).

Regional organisations are each unique in composition, by-laws, constitution and other areas. Conferences occur during even-numbered years.

National Level

Several countries have national APA or APE organisations, maintain websites, conduct annual or biennial conferences and publish professional journals, generally in their native language but often with abstracts in English. A growing number of APA and APE textbooks are published nationally, in the preferred language of the country. Illustrative of countries with strong national organisations are Brazil, Finland, Japan, Korea, Norway, Turkey and USA.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals (Illustrative)

- *Adapta: A Revista Profissional Da Sobama*. Sociedade Brasileira de Atividade Motoro Adaptada (SOBAMA)
- *Adapted Physical Activity Quarterly*, Human Kinetics
- *European Journal of Adapted Physical Activity*, European Union Federation of Adapted Physical Activity. *Motorik, Zeitschrift für Motopädagogik und Mototherapie*. Hofmann Verlag
- *Palaestra*, Challenge Publications, Illinois
- *Praxis der Psychomotorik*. Borgmann Publishing.

3.2. Reference Books, Encyclopaedias etc

- Davis, W. E. and Broadhead, G. D. (Eds.). (2007). *Ecological task analysis: Looking back. Thinking forward*. Champaign, IL: Human Kinetics.
- Doll-Teppe, G., Kroner, M., and Sonnenschein, W. (2001). *New horizons in sport for athletes with a disability: VISTA '99 Conference*. Oxford: Meyer and Meyer Sport.
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3.3. Book Series

Several series are available, generally funded by government or private agencies. Illustrative volumes are:

- Australian Sport Commission
- 1995. *Willing and able: An introduction to inclusive practices*
- 2001. *Give it a go: Including people with disabilities in sport and physical activity*
- European Union APA Projects. Contact H. Van Coppenolle at www.kuleuven.ac.be/thenapa/education/index.htm for books and DVDs.

3.4. Congress/Workshop Proceedings

Illustrative volumes of ISAPA proceedings are listed chronologically:

- Eason, R., Smith, T., and Caron, F. (Eds.). (1983). *Adapted physical activity: From theory to practice. Proceedings of 3rd ISAPA*, New Orleans. Champaign, IL: Human Kinetics.
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mauerber@rc.unesp.br

3.5. Data Banks

Organisations under other headings maintain data banks. IFAPA's partner, Human Kinetics, maintains an extensive data bank of members.

3.6. Internet Sources

- Adapted Physical Activity Council (APAC), American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD). www.aapar.org
- *Adapted Physical Activity Quarterly* (APAQ), the official journal of the International Federation of Adapted Physical Activity. www.humankinetics.com
- *Palaestra*, a journal. www.palaestra.com
- Council for Exceptional Children (CEC). www.cec.sped.org
- Human Kinetics. www.humankinetics.com
- International Council of Sport Science and Physical Education (ICSSPE). www.icsspe.org.
- International Federation of Adapted Physical Activity. www.ifapa.biz
- International Paralympic Committee. www.paralympic.org
- Special Olympics International, Inc. www.specialolympics.org
- National Centre on Physical Activity and Disability. www.ncpad.org
- National Consortium on Physical Education and Recreation for Individuals with Disabilities. www.uwlax.edu/sah/ncperid/annual.htm

4. Appendix Materials

4.1. Terminology

Embedded in the text.

4.2. Position Statements

United Nations Convention on the Rights of People with Disabilities 2006: IFAPA Position Statement
www.IFAPA.biz.

On highly qualified APA personnel and on inclusion, see www.aapar.org.

EQUIPMENT AND FACILITIES IN SPORT

Johannes Bühlbecker and Klaus Meinel

1. General Information

1.1. Historical Development

The ideas behind the design, construction and equipment of sports facilities in the modern age date back to the beginning of the 19th century. Initially, they were strongly influenced by sport in England, later by the gymnastics movement in Germany and Scandinavia and finally by the European-wide propagation of swimming as a means of preventing drowning and staying healthy. The principles of facility planning were established at the beginning of the 20th century and, to a large extent between the 1920s and 1940s, with greater intensity, after the Second World War. An exchange of experience at a European level was initiated in 1957. This culminated in the founding of the International Association for Sports and Leisure Facilities (IAKS) in 1965.

1.2. Function

With the exception of a few sports that are practised solely in the countryside or natural environment (e.g., skiing or mountain biking), sports generally require an infrastructure built and maintained specifically for that particular sport. These have to meet the sport's functional needs as well as the needs of safety, economy and ecology. The elements of such an infrastructure can include competition, training and leisure facilities, as well as ancillary facilities for athletes, spectators, the media and administration. The goal is, therefore, to produce appropriate planning, construction and operating principles, which are regularly updated to bring them into line with the latest findings.

1.3. Body of Knowledge

Essential for compliance with the requirements of sport facilities, as outlined in section 1.2 above, is the networking of findings from the following sports-related fields of knowledge: education, sociology, psychology, medicine, biomechanics, accident prevention, architecture, landscape design, engineering, materials testing, economics and ecology.

1.4. Methodology

A comprehensive presentation of the scientific methodology for designing and evaluating facilities is not possible because of the diversity of approaches in the various scientific fields. The goals of the methods in their totality are:

- To define the demand for the various facility types in accordance with the needs of today's and tomorrow's facility users
- Demand-oriented planning and realisation of the respective construction project in accordance with the requirements of sports function, economics, ecology and design
- A mode of operation respecting economic and ecological requirements as well as taking into account the needs of the respective sports disciplines and leisure activities.

1.5. Relationship to Practice

Compliance with the requirements for sporting facilities, as outlined in points 1.2 to 1.4 above, is not possible without an on-going and intensive exchange of information between scientists and practitioners and other institutions and bodies active internationally, such as: IOC, IPC, GAISF, ANOC, IANOS, TAFISA, UIA and ICSSPE. Within IAKS, information is exchanged, particularly in its multi-disciplinary congresses seminars and working groups, in which internationally recognised experts discuss the effects of major sports and leisure activity trends on the associated infrastructure and prepare respective planning guidelines as well as other planning aids.

1.6. Future Perspectives

If one considers the life cycle of a sports facility from the point of view of costs, the sum required for construction amounts to only 20% to 25%, according to various resources of Ministries of Finance and of facilities management groups. The remaining 75% to 80% is required for operation, maintenance, necessary replacement of technical components, demolition and disposal. In view of the fact that the funding available for sports facilities is becoming increasingly scarce, the goal should therefore be to lighten the overall financial burden on the client and operator by ascertaining the demand for the facility as accurately as possible, by designing it meticulously and by ensuring cost-effective construction and operation throughout the facility's life cycle.

The goal of the IAKS is the creation of high-grade, functional and sustainable sports facilities worldwide, without neglecting its other goals or the monitoring of trends in sport and their effects on the facilities provided.

2. Organisational Network

2.1. Major International Organisations and Networks

The IAKS, as noted earlier, is the International Association for Sports and Leisure Facilities. The IAKS and its members make up a global network for the design, construction, modernization and management of sports and leisure facilities. The IAKS is the only organisation recognised by the International Olympic Committee (IOC) for issues of sports facility development. It cooperates with the International Paralympic Committee (IPC) and numerous other partners. The IAKS contributes to the

economic and environmentally friendly realisation of sports and leisure facility projects and thus highlights the right of citizens to demand-driven and functional sports facilities.

The IAKS has about 1,000 members in 110 countries worldwide, which spread across all five continents.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Starting with virtually all European countries, the IAKS network now extends to Australia, New Zealand, Japan and China, as well as to Russia, Namibia, Chile and the whole of North America. These members are categorized as follows:

- Specialized firms: Architects, landscape architects, engineers and consultants
- Companies of the sports industry: Construction companies, manufacturers of sports facility products as well as sports equipment and operators of sports facilities
- Public institutions: Local-authority sports, parks and gardens and public works departments, national and regional sports ministries
- Sports organisations: National Olympic Committees, sports umbrella organisations and sports federations
- Scientific institutions: Higher education establishments for physical education, architecture and engineering.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

Available in the fields of the planning, realisation and operation of sports facilities on the international scene is the bi-monthly international magazine for sports, leisure and recreational facilities 'sb' from IAKS. As part of IAKS' services, it is provided free of charge to members.

'sb' has been published by the International Association for Sports and Leisure Facilities (IAKS) since 1967. 'sb' appears every two months and presents current trends and projects in the international sports and leisure facility sector.

'sb' appears in four languages: English, German, Spanish and French. The magazine is read mainly in German-speaking countries and the rest of Europe as well as in North, Central and South America, Africa, Asia and Australia.

3.2. Reference Books, Encyclopaedias, etc.

There are no comprehensive national or international encyclopaedias. This is due to the broad overall spectrum of information required and the changing nature of developments in many of the individual sectors.

3.3. Book Series

There are more than 30 titles to choose from within the IAKS series of publications. Included within these publications are the results of conferences, panels of experts and seminars.

3.4. Congress/Workshop Proceedings

Every two years, IAKS holds its international congress for the design, construction, modernization and management of sports and leisure facilities in Cologne. The congress papers and presentations are published as a hardcopy and on the IAKS website.

3.5. Data Banks

There are two data banks with information and contact addresses of specialized planners and companies for sports and leisure facilities available on the IAKS website. In these databases, IAKS members can publicise their activities in an informative profile. Potential customers can search here for specific products, services and references. The IAKS newsletter reports on current themes of the IAKS and its members.

3.6. Internet Sources

More information about the IAKS, congresses and publications can be found at www.iaks.info and at www.sb.iaks.info.

4. Appendix Material

4.1. Terminology

Not applicable.

4.2. Position Statements

The International Association for Sports and Leisure Facilities was founded in Cologne, Germany in 1965. The IAKS collects, evaluates and disseminates the experience acquired by its members or by other bodies during the planning, construction, equipping and management of all kinds of facilities for recreation, games and sport. As a result of these activities, the IAKS serves as an expert and consultant to:

- Ministries of sport, education and building
- Sports organisations (Olympic committees, associations and federations)
- Universities, technical colleges, schools of engineering, as well as schools and institutes of physical education
- Administrations of medium-size and large towns and cities (sports departments, construction departments, parks departments)
- Architects and engineers
- Industrial companies and business associations.

Experts of the IAKS advise local authorities, organising committees, clients, designers, operators and users of sports and leisure facilities. The services include location analyses, feasibility studies and development strategies, from individual projects through to Olympic bids.

The IAKS itself is actively involved in the development of standards and guidelines. IAKS members have access to the latest information on international standards and guidelines.

IAKS Goals

In view of the growth in sports-oriented lifestyles, close examination of the space required for exercise in the urban environment and in the open countryside is more urgently needed today than ever before. In the past, the emphasis often used to be solely on meeting the quantitative needs for sports facilities. Today, high priority is accorded to quality. The goal is to develop a sports and leisure facility that is equally functional, well designed and environmentally compatible. In the planning, construction and operation of such a high-quality facility, the sensible use of new materials, technologies and methods is also essential from the point of view of economy. In this way the goals are in full agreement with Agenda 21 of the Olympic Movement.

Through its work, IAKS contributes to the realisation of such sports and leisure facilities. At the same time, it highlights the citizen's right to suitable sports facilities in sufficient numbers. Important goals for future-oriented sports facilities are their multi-functionality, integration into their surroundings and environmental compatibility. Consideration should therefore be given to the following aspects:

- Forms of facility with varied uses and an attractive appearance (fun or adventure quality) for a wide range of age and interest groups and standards of performance (sport for all)

- Promotion of health-related activities
- Suitability for, or the possibility of, conversion to new forms of exercise or play
- Integration of other leisure-oriented, social or cultural facilities
- Spatial interconnection of sports facilities and integration into urban open-space schemes and into the residential environment, with easy access for less mobile users
- As far as possible, unlimited access and low admission fees
- Environmentally compatible construction, e.g. maximising soil permeability, avoidance of contaminated construction materials as well as material- and energy-intensive production processes, possibility of recycling building materials
- Environmentally compatible operation, e.g. minimising consumption of energy and water as well as the use of alternative energy sources.

In the public relations sector, the IAKS attempts to combine the efforts of the associations and decision-makers responsible for sports facility construction and to develop advocacy aids for the battle for shrinking reserves of finance and space. To ensure satisfactory provision of sports facilities in the future, those in decision making positions must unite with sports organisations, leaders and active members in answering the questions, how to convince the community to meet the sports facilities requirements of future generations.

A central element of the IAKS' public relations work is the Award for Exemplary Sports and Leisure Facilities. This is a joint competition for operators and architects, which deliberately focuses on the special importance of facility quality. Held for the first time in 1987, it pursues the goal of raising worldwide awareness, not only for functionality, but also for well-designed buildings and facilities. The importance of this competition prompted the IOC in 1999 to co-sponsor this award and it has since been called the IOC/IAKS Award. In 2005, the IPC joined this project that resulted in the additional awarding of a Distinction for Accessibility.

IAKS Activities

The world of sports and leisure facility development has been converging on Cologne every two years since 1969. At the international IAKS Congress, global infrastructural trends, technical topics and best practices are presented and discussed.

Concurrently, Koelnmesse and the IAKS stage the trade fair FSB – International Trade Fair for Amenity Areas, Sports and Pool Facilities – the world's biggest showcase for the industry's products and services. With 573 exhibiting companies from 41 countries and gross exhibition space of 62,000 square metres, FSB set a new record on the occasion of its 40th anniversary in 2009.

KINANTHROPOMETRY

Lindsay Carter

1. General Information

1.1. Historical Development

Kinanthropometry can be defined as 'The academic discipline that involves the use of anthropometric measures in relation to other scientific parameters and/or thematic areas such as human movement, physiology or applied health sciences'. Kinanthropometry is the discipline and anthropometry refers to the procedures for acquiring dimensions of the human body (Stewart, 2010). Among the techniques used in modern kinanthropometry, anthropometry has the longest history.

Artists and sculptors used dimensions of the human body in absolute and proportional ways, for example, Leonardo da Vinci (1452-1519) showed this in his many works, especially the 'Vitruvian Man' and Sigmund Elsholtz (1623-1688) was probably the first to use 'anthropometry' in its contemporary meaning. In 1628 Gerard Thibault wrote an extensive book, 'L'Académie de l'Espée', on body dimensions and fencing success. Adolphe Quetelet (1796-1874), described the Quetelet Index (now Body Mass Index) and was known for his application of statistical methods to human body dimensions.

Anthropologists and archaeologists also have a long tradition of the use of anthropometry, particularly relating to skeletal measurement. Late in the 19th century, several meetings were held to agree upon standards of measurement for anthropometry. The 13th International Congress of Prehistory, Anthropology and Archaeology, held in Monaco, 1906, is recognised for the first agreements. A subsequent meeting in Geneva, 1912, at the 14th International Congress of Anthropology and Archaeology, supplemented the agreements at Monaco (Hrdlička, 1939).

In 1914, Rudolph Martin formalised the methods and made revisions until the late 1950s (with K. Saller). The German school dominated anthropometry for the first half of the 20th century. This influence spread to the United Kingdom and into Sports Science in North America.

Kinanthropometry became a recognised discipline in its own right at the International Council of Sport Science and Physical Education in Brazil, 1978, when the International Working Group on Kinanthropometry (IWGK) was approved. Kinanthropometry is a sub-discipline to Biomechanics which in turn is one of the Fundamental Sport Sciences. The term kinanthropometry, rather than simply anthropometry, was chosen to emphasise the application of anthropometry to movement in addition to the measurements themselves. Currently, kinanthropometry continues to grow with practitioners found in all five continents. The International Society for the Advancement of Kinanthropometry (ISAK) promotes and fosters its goals.

1.2. Function

The aim of kinanthropometry is to improve understanding of the gross functioning of the human body by measurement of its size, shape, proportions and composition and relating these to health, exercise and performance. A central interest is that of physical performance, in particular, though not limited to sport performance. By examining the relationship between body measurements and aspects of performance, kinanthropometry helps in optimising training to improve performance and also helps to reduce injuries. It is useful for children, to aid in the early recognition of athletic potential and to examine the impact of early training on their growth and maturation. It serves an important function in assessing the relationship between exercise, nutrition and health, from the requirements of normal growth to the effects of ageing on the body, to the evolution and characteristics of the expression of different disease processes in the body. Gross functioning may also refer to applications other than sport: kinanthropometry is ideally suited to ergonomics, the optimisation of the fit between worker and workplace. A further important function of kinanthropometry is to improve, validate and standardise techniques for the measurement of the human body.

1.3. Body of Knowledge

The root words in kinanthropometry refer to movement, humans and measurement. In less simplistic terms, it is the study of human size, shape, proportion, composition, maturation and gross function (Ross, 1978). The discipline has a long history, since height and weight, the two simplest and most commonly used measures in kinanthropometry, have been measured for many centuries. Increasing sophistication led to the modern fields of anthropometry and biometry and much has been written on these topics. The classic reference is 'Lehrbuch der Anthropologie' (Martin and Saller, 1957), but Rudolph Martin's earlier work (1914) and the description of the measurements carried out in the International Biological programme (Weiner and Lourie, 1969) are important references. ISAK has modified the detailed descriptions by Ross and Marfell-Jones (1991) and Norton et al. (1996), to produce a new manual, International Standards for the Anthropometric Assessment, (ISAK, 2001 and 2006), in an effort to bring uniformity to the techniques in anthropometry. Since 1996, ISAK has operated an International Anthropometry Accreditation Scheme with four levels of expertise.

No discussion of body shape and proportion would be complete without reference to the brilliant work of D'Arcy Thompson (1917) and the application of allometry to growth by Huxley (1932). A comprehensive summary of our knowledge relating anthropometry to human growth is given by Edith Boyd (1980). Quantitative knowledge of human physique and composition includes somatotyping (Sheldon, Dupertuis and McDermott, 1954). Starting in the 1960s, somatotyping was redefined and made more rigorous and useful in a series of publications by Heath and Carter, starting in 1966 and culminating in their definitive volume (Carter and Heath, 1990).

Advanced technologies for assessing body structure and composition have been used along with

anthropometry, e.g. air displacement plethysmography, hydrometry, dual-energy X-ray absorptiometry (DEXA), magnetic resonance imaging (MRI) and computerized tomography (CT). In addition to using the somatotype to assess body shape and composition, advances in three-dimensional (3D) photonic scanning in the past decade have provided another method and link with kinanthropometry. Extensive data can be obtained quickly of body shape and surface dimensions in 2-3D and the images can be returned to later and often for different measures without the subject being present (Olds and Honey, 2006; Schranz et al., 2010).

Techniques for the assessment of body size, shape and composition are now of use in many diverse fields. Researchers have compiled a large body of knowledge regarding the relationship between body composition and both health and sport performance. Thousands of papers have been published on factors affecting body fat/adiposity alone. In addition, direct information obtained from cadaver studies has been reported by (Clarys, Martin and Drinkwater, 1984; Clarys, Provyn and Marfell-Jones, 2005). These are now supplemented by CT and MRI scans for a better understanding of the anatomical compartments. An important component of kinanthropometry concerns the measurement of a wide range of physical performance variables such as muscular strength, power, fitness and flexibility.

1.4. Methodology

Research in kinanthropometry is essentially quantitative in nature, using standard methodologies and analytical procedures. Typically studies are descriptive (cross-sectional) or experimental (involving an intervention). Considerable advances have been achieved by longitudinal and cross-sectional studies that compare, for example, aging in children and adults, athletes in different sports, people in different states of health, the relationship between lifestyle variables and physique and composition variables. Interventions may test hypotheses related to the effects of such variables as exercise and nutrition, in their various forms, on performance or variables related to body composition, body proportions, growth, etc. An important component of kinanthropometry concerns the measurement of a wide range of physical performance variables such as muscular strength, power, fitness and flexibility.

1.5. Relationship to Practice

The scientific literature abounds with reports of research describing applications of kinanthropometry in a wide variety of settings. However, some important applications are described.

Kinanthropometry has been used to detail normal growth patterns in children and then to examine factors affecting growth, in particular exercise and nutrition. In this context, kinanthropometric assessment of sexual maturity has demonstrated the effects of athletic training on puberty as well as on the reproductive cycle of athletic women.

Kinanthropometry has been used to examine performance related variables in world class athletes (e.g. Carter, 1984; Carter and Ackland, 1994; Rienzi et al., 1998, Ackland et al., 2003). It has been used in a wide range of cultural settings to investigate factors affecting nutritional status (e.g. Himes, 1991) and has been applied extensively in western countries in studies investigating health aspects of atypical fatness, ranging from extreme obesity to the emaciation of anorexia nervosa and to the effects of exercise on the body's fat distribution. The role of different types of physical activity in the health of the skeleton is an area of much contemporary interest; and new, sophisticated techniques for assessing bone, such as dual-energy X-ray absorptiometry and magnetic resonance imaging, are now included in the spectrum of kinanthropometric methods. These have been applied to populations including athletes, postmenopausal women and children, to provide support for the hypothesis that regular weight-bearing exercise is important for skeletal integrity. These techniques (and others) are also used to assess body composition in relation to health and physical activity.

Kinanthropometry has many applications in medicine. It has been applied to genetic studies, to examine the physique and body composition correlates of certain chromosomal configurations. Similarly, it has been applied in describing physical correlates of different disease states and for helping evaluate therapeutic strategies. It has important applications in the area of public health, from its general role in providing normative data for guiding individuals who wish to make lifestyle changes to improve their health, to the detection of those at risk for such common problems as cardiovascular disease.

With the continuing emergence of evidence that regular physical activity improves health status and extends life expectancy, it appears that kinanthropometric research and its applications will continue to expand as they have done for the past several decades.

1.6. Future Perspectives

Given its application to both health and sport, we will see an increased use of kinanthropometry in the future, as scientists, clinicians and coaches demand up-to-date information on norms and ranges for their populations of interest. These practitioners need ready access to data and simple, easily-applied techniques which will provide them with meaningful information and help them perform their jobs better. For their work to be of value, kinanthropometrists will need to continue the development of such techniques to ensure that they are practicable and affordable as well as meaningful. ISAK's role will be to provide such data access as well as continuing anthropometric information, education and training so that its members and graduates will be able to provide measurement and interpretation services to address demand. ISAK also sees a major role in providing an international forum for kinanthropometrists to share their skills and findings. As technology daily increases the ability to communicate globally, the opportunity to obviate duplication of effort in isolated pockets around the world and thus improve knowledge progression increases in parallel. With ISAK acting as a conduit for anthropometric information transfer and dissemination, that progress can be significantly enhanced.

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2. Organisational Network

2.1. Major International Organisations and Networks

The science of kinanthropometry is represented at the international level by the International Society for the Advancement of Kinanthropometry (ISAK). The society was founded in Glasgow in 1986, having grown out of the International Working Group in Kinanthropometry (IWGK), a branch of the then ICSSPE Research Committee. Officers on the Board include a President, Vice-President, Secretary General, Past-President and five Board Members. Since 1996, ISAK has promoted an accreditation scheme in anthropometry with four levels of certification (Levels 1-4), with more than 2500 persons certified by 2007. From 2008-10, 314 courses were offered in 21 countries resulting in 2723 L-1, 463 L-2 and 38 L-3 certificates issued. The most courses were in Argentina (55) and Australia (54), followed by Mexico (15), Iran (13), England (12), and Spain (12), with the remaining 15 countries running from 1-9 courses. There are 15 Criterion Anthropometrists (Level 4) in 11 countries.

There are approximately 310 active members of the society, from 35 countries. The society meets biennially and publishes a newsletter, **Kinanthreport**, three times per year to inform members about developments and issues within the science of kinanthropometry. In addition, the *Journal of Sports Sciences* is published in association with ISAK. [See www.isakonline.com].

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Europe

Europe has several centres of activity involved in kinanthropometric projects. These include the centres in Belgium, Portugal, Spain and United Kingdom.

Africa

The Kinanthropometry Interest Group of Africa (KIGA) is a resource for projects. Major research projects were conducted at the 1995 (Zimbabwe) and 2005 (Nigeria) All African Games. In South Africa, there have been projects on school children, athletes and health concerns.

Latin America

There is a strong interest in kinanthropometry in Latin America. In general, the leaders are affiliated with sports medicine groups, research institutes, government entities or universities. Kinanthropometry has been featured in their national congresses and many workshops and courses have been organised. The groups that are most active in kinanthropometry are in Argentina, Mexico, Brazil, Chile, Uruguay, Puerto Rico, Paraguay, Peru, Columbia and Venezuela.

South Korea, Japan

ISAK certification courses have been delivered on at least an annual basis for the past several years in Korea and Japan.

National Level – See Specialised Centres for further information.

- Australia: Australian Institute of Sport, (Canberra); Curtin University (Perth); University of New South Wales (Sydney); University of South Australia (Adelaide)
- New Zealand: The Institute of Sport and Recreation Research New Zealand (ISRRNZ), School of Sport and Recreation, AUT University, Auckland
- India: National Working Group on Kinanthropometry, National Institute of Sport, Patiala, India. Sports Authority of India, J.N. Stadium, Delhi
- Iran: National Olympic and Paralympic Academy of Iran, Department of Anthropometry; and Nutrition and Anthropometry Department, Sport Medicine Federation of I.R. Iran, Tehran, 15875-9659, Iran
- United Kingdom: University of Exeter (Exeter); Liverpool John Moores University (Liverpool); Robert Gordon University (Aberdeen).

Specialised Centres**Europe**

- School of Health Sciences, Faculty of Health and Social Care, The Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG, UK. [Contact: Arthur Stewart]
- School of Sport and Health Sciences, University of Exeter, Exeter, UK. [Contact: Roger Eston]
- Centre for Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, England, L33AF, UK
- Faculdade de Motricidade Humana, Estrada da Costa 1499-002 Cruz Quebrada – Dafundo, Lisboa, Portugal. [Contact: Isabel Fragoso]
- Sports Science Institute of Catalonia, Barcelona, Spain (Contact Prof. Jordi Porta)
- Sports Traumatology of the Catholic University of Murcia, Spain (Contact Prof. Francisco Esparza-Ros)
- University Complutense of Madrid, Spain (Contact Prof. María Dolores Cabanas)
- Vrije Universiteit Brussel, Faculty of Physical Education and Physiotherapy, Pleinlaan 2, B-1050 Brussels, Belgium.

North America

- Canadian Sport Centre – Calgary, Human Performance Laboratory, Faculty of Kinesiology – University of Calgary, 2500 University Drive NW., Calgary, AB T2N 1N4. [Contact: Nancy Scholz]
- College of Physical Education, University of Saskatchewan, Saskatoon, SK, S7N 0W0, Canada. [Contact: Donald Bailey]

- Rosscraft, 14732A 16-A Ave, Surrey, B.C. V4A 5M7, Canada
- School of Exercise and Nutritional Science, San Diego State University, San Diego, CA 92182-7251, USA. [Contact: Lindsay Carter]
- U.S. Olympic Training Center – Colorado Springs, CO. USA.

Asia and Australasia

- Australian Institute of Sport, Canberra, Australia
- University of South Australia, School of PE, Exercise and Sport Studies, Underdale, Australia. [Contact: Tim Olds]
- School of Public Health, Curtin University of Technology, GPO Box U1987 Perth WA 6845, Australia. [Contact: Deborah Kerr]
- Universal College of Learning, Private Bag 11022, Palmerston North, New Zealand. [Contact: Mike Marfell-Jones]
- School of Physical Education, University of Otago, Box 56, Dunedin, New Zealand
- Institute of Sport and Recreation Research, AUT University, Auckland, New Zealand. [Contact: Patria Hume]
- Korean National University of Physical Education, Department of Physical Education, 88-16 Olympic Park, Songpa-Ku, Seoul, South Korea 138-763
- National Olympic and Paralympic Academy of Iran Anthropometry Department, Tehran 16346, Iran; and Nutrition and Anthropometry Department, Sport Medicine Federation of I.R.Iran, Tehran 15875-9659, Iran. [Contact: Shahram Mevaloo, www.anthropometry.ir]

Latin America

- Departamento de Medicina, Club Atletico River Plate, Av. Figueroa Alcorta 7597, Buenos Aires. [Contact: Francisco Hollway]
- CELAFISCS, Av. Goias, 1400, São Caetano do Sul, Sao Paulo, 09520, Brazil
- Universidad Autónoma de Chihuahua, Facultad de Educación Física y Ciencias del Deporte, Chihuahua, CHIH, Mexico. [Contact: Guillermina De Leon]
- Libertador Pedagogical Experimental University, Barquisimeto, Lara State, Venezuela
- University of Puerto Rico, Physical Education and Recreation Department, Rio Piedras, Puerto Rico.

South Africa

School of Biokinetics, Recreation and Sport Science, North-West University, Potchefstroom, 2520. [Contact: Hans de Ridder.]

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

- *Journal of Sports Sciences* (UK)
- *African Journal for Physical, Health Education, Recreation and Dance* (SAF)
- *American Journal of Human Biology* (USA)
- *Annals of Human Biology* (UK)
- *American Journal of Physical Anthropology* (USA)
- *Archivos de Medicina del Deporte* (ESP)
- *British Journal of Sports Medicine* (UK)
- *Medicine and Science in Sports and Exercise* (USA)
- *Revista Brasileira de Ciencia e Movimento* (BRA)
- *Revista de Medicina Ciencias y Deportes* (ARG).

3.2. Reference Books, Encyclopaedias, etc.

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3.3. Book Series

Medicine and Sport Sciences. Karger Verlag Basel, New York. (Series Editors: Borms, J.; Hebbelinck, M., and Hills, A. P.): [Four volumes from 1982-2001.]

3.4. Congress/Workshop Proceedings

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3.5. Data Banks

Institute of Sport and Recreation Research New Zealand (ISRRNZ), AUT University Anthropometry Laboratory, 'Kinanthropometry Archive Project' [Director: Patria Hume].

3.6. Internet Sources

- ISAK – information about ISAK – organisation, information, courses, updates. www.isakonline.com
- Rosscraft/Turnpike Electronic Publications – Anthropometric Equipment; instructional CDs-DVDs. www.rosscraft.ca

4. Appendix Material

4.1. Terminology

Marfell-Jones, M., Olds, T., Stewart, A., and Carter, L. (2006). *International Standards for Anthropometric Assessment* (2nd Ed.). Potchefstroom, SAF: ISAK.

4.2. Position Statements

Not applicable.

PHYSICAL EDUCATION

Rosa López de D'Amico, Margaret Whitehead and Richard Bailey

1. General Information

This chapter focuses on international developments in physical education (PE). The topic is both extensive and controversial, with wide variations of views and situations across the world. This is not the only chapter that discusses issues pertinent to practices in PE. Readers are advised to consult sections *II. Sport Pedagogy*, *IV. Comparative Physical Education and Sport*, *III. Adapted Physical Activity* as well as *Sport and Diversity* for further reference to the content, teaching and nature of physical education. It needs to be remembered that the title 'physical education' is not universally used to name school-based physical activity. The subject may appear on the curriculum as Sport, Health or simply Physical Activity. It also needs to be borne in mind that physical activity in school does not always feature in a Physical Education Department. In some schools, what is understood to be Physical Education is the responsibility of an Arts Department, in others it is the responsibility of a Department of Personal and Social Education or Science and Health. The situation has been further complicated by changes in Higher Education. There is no longer necessarily a clear path from specific PE training, run by a PE Faculty into teaching PE in school. There are now numerous routes into PE teaching. All this variation in nomenclature and those managing the subject has, as indicated by Zeigler (2009), been profoundly unsettling and raised questions about the appropriate place of PE in education.

1.1. Historical Development

Since prehistoric times, there is reference to physical activity practices for survival purposes. Indigenous groups practised several forms of activities, at the beginning mainly for educational, religious and recreational purposes e.g., Mayas and Aztec civilizations, African tribes, etc. Subsequently, the main purpose for physical activity was mostly military. References to this role for physical activity can be found from many geographical areas: India, China, Mesopotamia, Egypt, Persia, Babylon, Greece and Rome. In medieval times, neither PE nor gymnastics took place in school or universities and physical activity was only seen as valuable for warriors. During the Renaissance, there are references to the importance of physical education or physical activity for educational, health and social purposes. The specific reference to Physical Education in the school syllabus started with the different European gymnastics schools that began in the 18th Century. Some of these had an emphasis on military training, others a health and/or sport orientation: e.g., German 'gymnastik'- 'turnen', Swedish gymnastics, French gymnastics, English gymnastics, Danish school, Czechoslovakian gymnastics 'sokol' and the Russian school (Ramírez, 2009).

In spite of its historical presence, PE has been neglected in many places in the contemporary world. Barrow (1982) captures the spirit of this relegation of physical education to a marginal position when he writes that it surely qualifies as a part of schooling, since it contributes to children's health and fitness, but it does not qualify as a proper educational activity. It is not surprising that when educational institutions are forced to prioritise or economise, those subjects at the margins are most likely to be sacrificed. It is ironical and indeed worrying that even in places in which by law, PE has the same status as the other subjects in the school curriculum, PE teachers have had to struggle to ensure compliance.

During the 1970s and 1980s, academics and practitioners from around the world began reporting a decline in the position and security of physical education. 1978 saw the publication of the International Charter of Physical Education and Sport under the auspices of the United Nations Educational, Scientific and Cultural Organisation (UNESCO). The Charter stated a set of Articles including the following:

- Article 1. The practice of physical education and sport is a fundamental right for all
- Article 2. Physical education and sport form an essential element of lifelong education in the overall education system
- Article 3. Physical education and sport programmes must meet individual and social needs
- Article 11. International cooperation is a prerequisite for the universal and well-balanced promotion of physical education and sport.

Despite the UNESCO Charter, there was a continuing decline and in some cases disappearance, of the subject in the 1990s, which resulted in widespread anxiety and prompted a series of conferences, advocacy statements and lobbying activities (Hardman, 2005). Surprisingly, the greatest threat was experienced in advanced and classified first world countries. Some less developed countries such as Cuba and Venezuela did not experience this problem so acutely.

A very significant event in respect of concerns about the state and status of PE was the First World Summit on Physical Education, which was initiated by the International Council of Sport Science and Physical Education (ICSSPE). The World Summit took place in Berlin in November, 1999, with the support of a host of international agencies including the International Olympic Committee (IOC), UNESCO and the World Health Organisation (WHO). The Summit was a coming together of individuals and groups from many countries seeking to assert the value of physical education and to reverse what was perceived as an unprecedented diminution of its security within school curricula. A central element of the Summit was a report of the first worldwide survey of the 'state and status of Physical Education' (Hardman and Marshall, 2000). The authors of the survey concluded that 'physical education has been pushed into a defensive position. It is suffering from decreasing curriculum time allocation, budgetary controls with inadequate financial, material and personnel resources, has low subject status and esteem, is being ever more marginalised and undervalued by the authorities' (Hardman and Marshall, 2000). The Worldwide Survey was accompanied by a set of position papers that argued the 'case for physical education' (see e.g., Talbot, 2001). Taken together,

these documents prompted the Summit to formulate Action Agendas. This Summit was followed by other key international gatherings such as the UNESCO third Meeting of Ministers and those responsible for Physical Education and Sport (MINEPS III) in Punta del Este, Uruguay (Savolainen, 1999), the Regional Seminar in Africa and for Latin America and the Caribbean (in Bamako and Havana, 2003), MINEPS IV (in Athens, Greece, 2004) and the Porto Novo Draft Quality Reference Framework (Benin, 2005), Iberoamerican Statement (in Havana, 2008). Pressure from these meetings made an impact worldwide and the United Nations declared 2005 as the International Year for Sport and Physical Education. ICSSPE commissioned the Sport in Education (SpinEd) project, an international research study, aiming 'to gather and present evidence to policymakers regarding the benefits to schools of good quality physical education and sport' (Bailey and Dismore, 2004). The headline findings were that physical education had the potential to make distinctive contributions to a range of educational and societal values, including physical health, the development of social skills, the improvement of emotional and affective wellbeing and could contribute to improved academic performance.

A Second World Summit took place in Magglingen, Switzerland, 2005, which included presentations on the international situation of physical education from two groups of researchers: Hardman and Marshall (2006) and Pühse and Gerber (2006). Despite the differences of methodology and sources of evidence, both of these studies reported that, whilst some countries had made good progress, many continued to demonstrate poor quality or no physical education provision.

It is important to indicate that while both surveys are valuable and extensive, there are still many areas of the world from which only limited information has been gathered. Language barriers and publication distribution affect data collection and there can be wide variations in practice within a country that are influenced by different cultural perspectives.

1.2. Function

ICSSPE (2010) has published an international Position Statement, which has been endorsed by UNESCO, IPC, IOC and UN Office of Sport for Development and Peace (UNOSDP): "Physical education develops physical competence so that all children can move efficiently, effectively and safely and understand what they are doing. The outcome, physical literacy, is an essential basis for their full development and achievement" (see www.icsspe.org). However, Bailey and Dismore had (2004) surveyed more than 50 countries to generate a 'functional definition' (that is a description of what happens rather than an analytical account), as follows: 'Physical Education refers to those structured, supervised physical activities that take place at school and during the school day'.

Learning in physical education focuses on movement development and characteristically includes participation in a wide variety of physical activities such as competitive team games, forms of gymnastics, swimming, dance and outdoor activity.

The underlying aims of the subject include achieving high level motor competence, contributing to cognitive, social and emotional education, enabling learners to take part in culturally recognised forms of physical activity and promoting the adoption of a healthy lifestyle. The identification of this variety of competing aims has been counter-productive in establishing the intrinsic and unique value of the subject. The relatively new concept of physical literacy (Whitehead, 2010), which is being adopted in many countries worldwide, aims to remedy this situation, uniting all proponents of physical education to work to the goal of fostering physical literacy in every learner. Fundamental to the concept is a monist philosophy that refutes the separation of the body and the mind and acknowledges the significance of the embodied dimension in human existence. In short, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse. Everyone can be physically literate. The key to being physically literate is the motivation and confidence to take part in physical activity as a lifelong habit. This aspiration presents a real challenge to the profession in all countries.

1.3. Body of Knowledge

Physical education research draws on an extremely wide range of bodies of knowledge. The main areas of research include:

- Comparative Physical Education and Sport (e.g., Hardman and Marshall, 2000; Pühse and Gerber, 2006)
- Philosophical Justifications for Physical Education (e.g., Haag, 2008; McNamee, 2005)
- Didactics, Teacher Education and Pedagogy (e.g., Amade-Escot, 2000; Haag, 2008)
- Gender and Sociological Issues (e.g., Benn, Pfister and Haifa, 2010)
- Inclusive / Adapted Physical Education (e.g., DePauw and Doll-Teppe, 1989)
- Policy Analysis (e.g., Hummel and Schierz, 2006)
- Empirical Reviews of Outcomes of Physical Education (e.g., Bailey, 2006; Bailey, Armour, Kirk, Jess, Pickup and Sandford, 2006).

In addition, there are interesting position statements from various groups such as: psychomotor learning, physical literacy, sociological perspectives and religious practice, to mention but a few.

1.4. Methodology

Kirk, Macdonald and O'Sullivan (2006) provide a summary of the dominant methodological perspectives in international physical education research. Kirk (2010) includes a valuable critique of teaching methodologies and links these with current problems within physical education. He identifies pedagogical models for Health Education and Sport Education and anticipates further models in relation to Games for Understanding and Physical Literacy.

1.5. Relationship to Practice

A landmark treatise by Arnold (1979) presents the notion of education about, through and in movement. Education about movement includes the coverage of theoretical aspects of movement for example, physiology; education through movement refers to the broader educational goals that can be achieved through movement experiences, e.g., development of social skills; education in movement focuses on developing movement competence per se. This presentation has been widely accepted but is now questioned by Capel and Whitehead (in press) who argue that the value of PE lies in its potential to nurture the human physical dimension, a dimension that is now seen as highly significant in achieving overall quality of life.

1.6. Future Perspectives

The Second World Survey of Physical Education (Hardman and Marshall, 2009) still found problematic situations that were pointed out in the year 2000, such as: gaps between policy and practice; physical education curriculum quality and relevance; insufficient curriculum time allocation; perceived inferior subject status; lack of competent qualified and inadequately trained teachers; deficiencies in facilities, equipment and teaching materials and inadequate provision or awareness of pathway links to wider community programmes outside of schools. While the authors acknowledged some improvements in inclusion policy and practice, barriers to equal provision and access opportunities for all still remained. Kirk (2010) takes a somewhat pessimistic view looking seriously at whether PE has a future.

On a positive side, it can be said that there has been a growing awareness and increased interest in PE. Consideration of physical education has been included in the agendas from Ministers' meetings, WHO, UNESCO, continental and regional forums and congresses to national and local discussions. ICSSPE has identified Quality Physical Education as one of its strategic priorities. More regional academic organisations are now visible and publications as well as written statements have helped to raise the issue of the status of the subject worldwide. More network and cultural diversity discussions have taken place, as it has been understood that by working together and taking part of the political agenda, the status of physical education in the world could be better appreciated, accepted and practised.

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- Pühse, E., and Gerber, M. (Eds). (2005). *International Comparison of Physical Education: Concepts, Problems, Prospects*. Oxford: Meyer and Meyer.
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- Zeigler, E. (2009). How the International Society for Comparative Physical Education and Sport could help the world reach consensus about our field in the 21st century. Presented at the ISCPES 2009 Regional Conference. June 22-24, Vancouver – Canada.

2. Organisational Network

2.1. Major International Organisations and Networks

The main international forum for physical education organisations is the International Committee for Sport Pedagogy (ICSP), which operates under the auspices of ICSSPE. Its membership includes six subject-specific associations:

1. Fédération Internationale d'Education Physique (FIEP);
2. International Association of Physical Education and Sport for Girls and Women (IAPESGW);
3. Association Internationale des Ecoles Supérieures d'Education Physique (AIESEP);
4. International Federation of Adapted Physical Activity (IFAPA);
5. International Society for Comparative Physical Education and Sport (ISCPES);
6. International Council of Coaching Excellence.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

ICSSPE utilises regional networks to promote its work and support the place of physical education in education. There are also region-specific groups, such as the European Physical Education Association (EPEA), the African Association for Health, Physical Education, Recreation, Sport and Dance (AFAHPERD), Pan Asian Society of Sports and Physical Education (PASSPE), and the Iberoamerican Association for Physical Education and Sport at School (AIEFDE).

Some regional or national groups of physical education researchers form Special Interest Groups (SIGs). Among the most active are the Australian Council for Health, Physical Education and Recreation (ACHPER), American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), British Educational Research Association's Physical Education and Sport Pedagogy SIG, the American Educational Research Association's Research on Learning and Instruction SIG, the Australian Association for Research in Education's Health and Physical Education SIG and the German Association for Sport Science (section Sport Pedagogy).

Other networks can also be found in several Asian countries (Japan, Taiwan, etc); in Latin America (Mexico, Brazil, Colombia, Argentina, Cuba, etc); and in the Middle East with The Middle East Qatar Sports International (QSi) and the International Society for Eastern Sports and Physical Education.

There are many universities that have Departments just for Physical Education (e.g., Universidad Pedagógica Experimental Libertador – Venezuela) and their respective research clusters/centre (e.g., Centro de Investigación Estudios en Educación Física, Salud, Deporte, Recreación y Danza – EDUFISADRED).

2.4. Specialised International Degree Programmes

A European Physical Education Masters has been in place since 2006 and is offered by four partner universities in Italy, Austria, Denmark and Norway with associate partners located in Germany and the UK. The two-year programme includes coursework and an internship. There are also graduate programmes (Specialisation, Master, Doctoral and PhD) in PE in many countries.

3. Information Sources

Information can be found in physical education specialised material but in some countries it is also located in multi-disciplinary educational academic sources. It is important to consult section II. Sport Pedagogy, III. Adapted Physical Activity, IV. Comparative Physical Education and Sport, Sport and Diversity.

3.1. Journals

Most specialist journals report findings related to the state and status of physical education in schools, as do those from related areas such as sport science, education and health. Some of those that have included relevant findings in recent years include:

Africa

- *African Journal for Physical, Health Education, Recreation and Dance* (South Africa)
- *East African Journal of Physical Education, Sports Science, Leisure and Recreation Management* (East Africa)
- *West Africa Journal of Physical and Health Education* (West Africa).

Asia

- *Asian Journal of Physical Education* (Taiwan)
- *International Journal of Eastern Sports and PE* (Asia)
- *International Journal of Eastern Sports and Physical Education* (Korea)
- *International Journal of Sport and Health Sciences* (Japan)
- *Pan Asian Journal of Sports and Physical Education* (Korea).

Europe

- *APunts: Educación física y deportes* (Spain)
- *Bulletin of the International Council for Sport Science and Physical Education* (Germany)
- *International Journal of Physical Education* (Germany)
- *International Sports Studies* (Germany)

- *Physical Education and Sport Pedagogy* (UK)
- *Revista Agora* (Spain)
- *Revista Española de Educación Física* (Spain)
- *Revue Internationale des Sciences du Sport et de l'education Physique – Staps* (France)
- *Science et Motricité* (France)
- *Sport, Education and Society* (UK)
- *Sportwissenschaft* (Germany).

Latin America

- *Acción* – electronic journal – (Cuba)
- *Actividad Física y Ciencias* – electronic journal – (Venezuela)
- *Cultura Física* (Universidad Pedagógica y Tecnológica de Colombia)
- *Desencuentros* (Colombia)
- *Educación Física y Deporte* (Universidad de Antioquia) (Colombia)
- *Edufisica* (Universidad del Tolima) (Colombia)
- *Lecturas en Educación Física y Deporte* – electronic journal – (Argentina)
- *Lúdica Pedagógica* (Universidad Pedagógica Nacional)
- *Revista da SOBAMA* (Sociedade Brasileira de atividade motora adaptada) (Brazil)
- *Revista Kinesis* (Colombia).

Middle East

- *Jordan Journal of Educational Science* (Jordan)
- *Journal of Physical Education* (Iraq)
- *Saudi Journal of Sports Medicine* (Saudi Arabia)
- *The Journal of Educational and Psychology Studies* (Sultanate of Oman).

North America

- *AVANTE* (Canada)
- *ICHPER.SD Journal of Research in Health, Physical Education, Recreation, Sport and Dance* (USA)
- *Journal of School Health* (USA)
- *Journal of Teaching Physical Education* (USA)
- *QUEST* (USA)
- *Research Quarterly for Exercise and Sport* (USA).

Oceania

- *Asia Pacific Journal of Health Sport and Physical Education* (Australia).

3.2. Reference Books, Encyclopaedias, etc.

- Fessler, N., Hummel, A., and Stibbe, G. (Eds.). (2010). *Handbuch Schulsport*. Schorndorf: Hofmann.
- Haag, H. (2008). *Network for Gaining Information (Sport Pedagogy)*. In H. Haag (Ed.) *The Future of School Sport (Physical Education) in Today's World* (pp. 253-276). Berlin: Logos.
- Hardman, K., and Marshall, J. (2000). *Worldwide Survey of the State and Status of School Physical Education: Final Report to the International Olympic Committee*. Manchester, UK: University of Manchester.
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- Pühse, U., and Gerber, M. (Eds.). (2006). *International Comparison of Physical Education*. Oxford: Meyer and Meyer.
- UNESCO. (2008). *Innovative Practices in Physical Education and Sports in Asia*, Bangkok: Asia-Pacific Programme of Educational Innovation for Development.

3.3. Book Series

Most of the major publishers of physical education literature (e.g., Routledge, Hofmann, Meyer and Meyer, Human Kinetics, Logos) produce series related to physical education, with most published in English. Other publishers, for example in Spanish, are Kinesis, INDE, Gymnos, Stadium.

3.4. Conferences/Workshops Proceedings

A landmark conference report was the proceedings of the first World Summit in Berlin. Ref: Doll-Tepper, G., and Scoretz, D. (Eds.). (2001). *World Summit on Physical Education*. Berlin: ICSSPE. This contains the key findings of the Worldwide Survey, as well a number of advocacy statements from leading international thinkers.

Other valuable information can be found in the proceedings of conferences of organisations that constitute the International Committee for Sport Pedagogy (ICSP). These organisations are listed in section 2.1. Major International Organisations and Networks.

Other useful sources include:

- Dodd, G. (Ed.). (2011). *Moving, Learning and Achieving*. Proceedings of the 27th ACHPER International Conference, Adelaide.
- Cuddihy, T., and Bryner, E. (2009). *Creating Active Futures*. Proceedings of the 26th ACHPER International Conference, Brisbane.

Saunders, J, Hickey, C., and Maschette, W. (Eds.). (2008). *People, Participation and Performance – Physical Education and Coaching*. Proceedings of 2006 Commonwealth and International Sports Conference. Melbourne: Artillery Press.

3.5. Data Banks

Apart from the generic sport science databases described elsewhere, there are no specific databases for physical education.

3.6. Internet Sources

- Australian Physical Education Discussion Listserve Austpe-l@hms.uq.edu.au
- ICSSPE Conference Calendar www.icsspe.org
- Intervention en Education Physique et Sports (eJRIEPS) www.fcomte.iufm.fr
- Iraqi Sport's Academy <http://www.iraqacad.org/>
- Jordan Olympic Committee <http://www.joc.jo/>
- PE Central www.pecentral.org
- Physical Activity and Public Health On-Line Network PHYS-ACT@VM.SC.EDU
- Physical Education – The Role of Physical Education and Sport in Education (SPINED) <http://spined.cant.ac.uk>
- Physical Education Digest www.pedigest.com
- Physical literacy www.physical-literacy.org.uk
- Rede CEDES Labomidia <http://www.cedes.ufsc.br>
- Sportpaedagogik Online www.sportpaedagogik-online.de
- SportQuest www.sirc.ca

4. Appendix Material

4.1. Terminology

Definitions of physical education vary around the world and are often debated in academic forums. Definitions and interpretations of PE are, at times, assumed and not clearly specified. It is typically understood that physical education takes place in a structured and supervised manner in the school setting, or just simply understood as a course in the curriculum. Definitions and terminology related to physical education are also discussed and challenged in the related fields of Sport Pedagogy and Comparative Physical Education. But there are also slight variations depending on the society or cultural background, in which language and the history of the education system do play an important role

4.2. Position Statement

There are several position statements (see ICSSPE 2010, quoted in section 1.2 above), ranging from the UNESCO International Charter of Physical Education and Sport (1978), to the World Summits on Physical Education (Berlin, November, 1999 and Magglingen, December, 2005). Regional statements also exist (e.g., 1st Ibero American Summit on Physical Education and School Sports in Cuba, 2008) and in addition, FIEP, a member association of the ICSP published *A new concept of Physical Education* in 2000/01.

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ATHLETIC TRAINING AND THERAPY/ PHYSIOTHERAPY

Catherine Ortega and Larry Leverenz

1. General Information

1.1. Historical Development

In early Greece, the establishment of the Panhellenic Games the forerunner to the modern-day Olympics led to the introduction of the terms coach and trainer to describe an athlete's primary health care providers. These early health care practitioners possessed a remedial knowledge of diet, rest and exercise, as well as the effect of each on physical development and performance. They utilised basic tools such as hot baths, massage, anodynes and other measures to condition and treat the athletic competitors. The education, function and role of these early coaches and trainers/therapists evolved through the years and today we refer to these health care professionals as athletic trainers, athletic therapists, sport rehabilitators, biokineticists and sport physiotherapists, to name a few. The professional titles of the allied health practitioner differ from one country to another. Still, the populations with whom these allied health professionals work and the goals of health care outcomes, are closely related and in some cases are virtually the same.

1.2. Function

Athletic trainers and therapists are qualified health care professionals educated in the management of problems and conditions related to physical activity. Working closely with physicians and other health care personnel, the athletic trainer or therapist operates as an integral member of the health care team in various settings. Athletic trainers work with medical personnel, athletic personnel, individuals involved in physical activity and parents of young athletes in the development and coordination of efficient and responsive health care delivery systems.

1.3. Body of Knowledge

The discipline of athletic training/therapy brings together theoretical and applied perspectives from several inter-related bodies of knowledge. The practitioner's professional preparation is directed toward the development of specified competencies in the following areas:

- Risk management and injury prevention
- Pathology of injuries and illnesses

- Assessment and evaluation
- Acute care of injury and illness
- Pharmacology
- Therapeutic modalities
- Therapeutic exercise
- General medical conditions and disabilities
- Nutritional aspects of injury and illness
- Psychosocial intervention and referral
- Health care administration and
- Professional development and responsibilities.

1.4. Methodology

Various methodological approaches and tools are utilised in athletic training, therapy and related research. Research can be categorized as follows:

- Basic Science – includes controlled laboratory studies in the sub-disciplines of exercise physiology, biomechanics, motor behaviour and others that relate to athletic training and sports medicine
- Clinical Studies – includes assessments of the validity, reliability and efficiency of clinical procedures, rehabilitation protocols, injury prevention programmes, surgical techniques and related practices
- Educational Research – a broad category ranging from basic surveys to detailed athletic training/sports medicine curriculum development. Studies in this category generally include assessments of student learning, teaching effectiveness (didactic or clinical), educational materials and curriculum development
- Sports Injury Epidemiology – includes studies of injury patterns among athletes. These studies generally encompass large-scale data collection and analysis. Surveys and questionnaires may be classified in this category, but are more likely to come under the Observational/Informational Studies category
- Observation/Informational Studies – includes studies involving surveys, questionnaires and descriptive programmes that relate to athletic training and sports medicine.

1.5. Relationship to Practice

Athletic training and athletic therapy have numerous applications in the related field of allied health care. In cooperation with physicians and other allied health personnel, the athletic trainer and therapist operate as integral members of the athletic/sport-related/physical activity health care team in their respective country. They are employed in secondary schools, colleges and universities, sports medicine clinics, professional sports programmes, biomechanics laboratories, academic settings and other athletic health care settings. They also participate in extensive clinical affiliations with athletic teams or physically active individuals under alternative settings. At the secondary school, college and

university levels, the athletic trainer or therapist is responsible for the safety and quality of health care services for student athletes. Professional sports require the practitioners to work with elite athletes year round in rehabilitation, conditioning and player development. Within sports medicine clinics and hospitals, athletic trainers and therapists work with a diverse patient population and with a variety of other health care professionals. In an industrial setting, they help reduce time lost due to injury and help maintain cost-effectiveness.

The following professional organisations are affiliated with the World Federation of Athletic Training and Therapy:

- Athletic Rehabilitators of Ireland
- Armed Services Athletic Trainers Society
- Association of Chartered Physiotherapists in Sports Medicine (UK)
- Association of Chartered Physiotherapists in Sports Medicine (UK)
- Biokinetics Association of South Africa
- British Association of Rehabilitators and Trainers
- Canadian Athletic Therapists' Organisation
- Federazione Italiana Fisioterapisti
- Japan Sports Association
- Japan Athletic Trainers' Association
- Japanese Professional Baseball Athletic Trainers Society
- Korean Association of Certified Exercise Professionals
- Korean Athletic Trainers Association
- National Athletic Trainers' Association (USA)
- Ontario Athletic Therapists' Association
- Professional Baseball Athletic Trainers Society
- Society of Sports Therapists
- Society of Tennis and Medicine
- Spanish Association of Sports Nurses
- Taiwan (People's Republic of China) Athletic Trainers' Society

Educational Institution Members include:

- Beijing Sports University (People's Republic of China)
- Murdoch University (Australia)
- University of Bedfordshire (United Kingdom)
- University of Georgia
- University of Texas Health Science Center at San Antonio
- University of Wisconsin-La Crosse
- Purdue University.

The relationship among the professional organisations of the Federation is not possible without an

ongoing and intensive exchange of information between researchers and practitioners. Affiliations with numerous organisations enhance the Federation's ability to provide this vital exchange of information.

1.6. Future Perspectives

For the profession, the future holds further interactions with worldwide leaders in athletic training, athletic therapy, biokinetics, sports physiotherapy and sports rehabilitation. The disciplines hope to improve collaboration among health care professionals throughout the world in the development of new and innovative strategies to improve the health care of individuals participating in physical activity.

2. Organisational Network

2.1. Major International Organisations and Networks

The World Federation of Athletic Training and Therapy (WFATT) is an international coalition of national organisations of health care professionals in the fields of sport, exercise, injury/illness prevention and treatment. The Federation strives to promote the highest quality of health care and functional activity through the collaborative efforts of its members.

The first official World Congress of the World Federation of Athletic Training and Therapy was held in Los Angeles, California, in 2001 and will continue to meet every two years at various international locations.

WFATT membership is open to professional associations and organisations whose scope of practice includes the prevention, care and rehabilitation of athletic and sports-related injuries and conditions. More than one association/organisation from a country can be approved for membership in the WFATT.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

At the national level, the chartered associations of the WFATT assist athletic trainers and therapists in advancing, encouraging and improving the profession through educational and practical programmes. These associations are:

- Association of Chartered Physiotherapists in Sports Medicine (ACPSM) (UK)
- Biokinetics Association of South Africa (BASA)
- Canadian Athletic Therapists Organisation (CATA)
- Japan Amateur Sports Association (JASA)

- Japan Athletic Trainers' Association (JATO)
- National Athletic Trainers' Association (NATA) (US)
- Taiwan (Republic of China) Athletic Trainers' Society.

Additional national member associations are:

- Italian Federation of Physiotherapists (FIF)
- Japan Athletic Trainers' Association for Certification
- Korean Association of Certified Exercise Professionals
- Ontario Athletic Therapists' Association
- Spanish Association of Sport Nurses (AED)
- Society of Tennis Medicine and Science (STMS).

Educational institutions and associate member organisations partner with WFATT to advance mutual goals. These organisations include:

- Board of Certification, Inc, United States
- Beijing Sports University (People's Republic of China)
- Murdoch University (Australia)
- University of Bedfordshire (United Kingdom)
- University of Georgia
- University of Texas Health Science Center at San Antonio
- University of Wisconsin-La Crosse
- Purdue University.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

- *American Journal of Sports Medicine*
- *Athletic Therapy Today*
- *British Journal of Sport and Medicine*
- *Journal of Athletic Training*
- *Journal of Sports Rehabilitation*.

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3.3. Book Series

Not applicable.

3.4. Conference/Workshop Proceedings

The World Congress of the World Federation of Athletic Training and Therapy is held every other year with an international rotation. Health care professionals from around the globe meet to share information and knowledge related to the prevention, treatment and management of sports injuries. The event includes presentations of scientific papers and case studies, and the opportunity to participate in clinical hands-on workshops. The Third World Congress of the World Federation of Athletic Training and Therapy was a combined meeting with the British Association of Sport and Exercise Medicine and the Association of Chartered Physiotherapists in Sports Medicine and a

celebration of the 500th Anniversary of the Royal College of Surgeon of Edinburgh. In 2007 the World Congress was held in Tokyo, Japan by the Japan Sports Association. Congress proceedings are printed and distributed to the membership.

3.5. Data Banks

Several athletic training and therapy organisations maintain their own databases of injury statistics and on the related health care materials for athletes and those who are physically active. One such resource, the National High School Sports Injury Registry, is designed to be an ongoing source of information regarding the frequency, type and severity of injuries that occur in sports at the high school level in the United States. The registry tracks injuries in American football, wrestling, baseball, softball, field hockey, girls' volleyball, boys and girls basketball and football, offering athletic trainers immediate access to a wealth of data that can be utilised in the areas of research, education and public relations.

3.6. Internet Sources

The World Federation of Athletic Training and Therapy

<http://www.wfatt.org/>

Canadian Athletic Therapists Organisation

www.athletictherapy.org

The National Athletic Trainers' Association

<http://www.nata.org>

Association of Chartered Physiotherapists in Sports Medicine (UK)

<http://www.acpsm.org>

Biokinetics Association of South Africa

www.biokinetics.org.za

Japan Athletic Trainers' Organisation

www.jato-trainer.org

Japan Sports Association

Tanaka-n@japan-sports.or.jp

4. Appendix Material

4.1. Terminology

Not applicable.

4.2. Position Statements

The National Athletic Trainers' Association (NATA) has released the following position statements, available online at www.nata.org:

- *Blood Borne Pathogens Guidelines*
- *Fluid Replacement for Athletes*
- *Lightning Safety for Athletics and Recreation*
- *Physically Active Definition*
- *Management of Sport Related Concussion*
- *Exertional Heat-Related Illnesses*
- *Emergency Planning in Athletics*
- *Management of Asthma in Athletes.*

The Canadian Athletic Therapists Association (CATA), another member organisation of WFATT, also compiles consensus statements. These can be easily obtained via correspondence at www.athletictherapy.org.

MOTOR BEHAVIOUR: MOTOR DEVELOPMENT, MOTOR CONTROL AND MOTOR LEARNING

Darlene Kluka

1. General Information

1.1. Historical Development

Motor behaviour involves human action that includes motor control, motor development and motor learning. Motor development is the study of the sequential, continuous age-related processes involving changes in movement behaviour (Haywood and Getchell, 2009). Motor control involves the study of movements and postures and the mechanisms that underlie them (Schmidt and Lee, 2011). Motor learning refers to a multifaceted set of internal processes that affect relatively permanent changes in human performance through practice, provided the change cannot be attributed to a human's maturation, a temporary state or instinct (Kluka, 1999).

The theoretical foundations of motor development have evolved from three different perspectives: maturational; information-processing; and ecological. Biological development, through maturation and central nervous system development, has been emphasised by scholars categorised as maturationists (Gesell, 1928; McGraw, 1935). Information-processing advocates view an individual's capacity to assimilate sensory information from the environment as a primary contributor to motor development (Schmidt, 2011; Clark and Whittall, 1989). Ecological theorists emphasise that it is the interaction of the human, the environment and the task that are critical to motor development (Kugler, Kelso and Turvey, 1982).

For the past several decades, research initiatives conducted in motor control have resulted in the development of several theoretical models, including reflex theories, hierarchical theories and dynamic systems theory. Some of the earliest recorded investigations involved those of Sherrington (1906) related to stimulus-response coupling for action. Psychologists in the 1920s and 1930s (Thorndike, 1924) viewed movement pattern acquisition as a link in an action chain that was triggered by an external stimulus and visually observed. Hierarchical theories focus upon all aspects of movement planning and execution and include the central nervous system hierarchy. Becoming popular in the 1960s and 1970s (Keele, 1968; Schmidt, 1975; Shapiro, 1978), motor programmes, consisting of motor commands from the brain's highest level through the musculature, were postulated as controlling human action. More recently, a very different approach to motor control has evolved. By the 1960s, the relationship of the performer and the environment in which action occurred became important to understanding motor control (Bernstein, 1967; Gibson, 1979). Since the 1980s, there

has been much interest in dynamic systems theory that provides an alternative to previous motor control theories. The theory suggests that human movement results from the body's self-organisation of the performer's environment and the task demands (Sheridan, 1984; Turvey, 1990).

Motor learning theories have been derived to explain how motor skill acquisition is achieved. The first theories involved the development of memory representations to guide human action. Two of the most popular have been the closed-loop theory (Adams, 1971) and the schema theory (Schmidt, 1975). A relatively new approach to the understanding of motor learning involves the ecological theory of perception and action (Gibson, 1979). The dynamic relationship between the performer and the environment in the learning process becomes paramount to the discussion. Other models constructed to explain the process of motor learning include Fitts' and Posner's Three-Stage (1967) and Gentile's Two-Stage models (1972).

1.2. Function

There are presently three major bodies of knowledge which involve research and practice in motor behaviour. The first involves structural and functional constraints and transitions relative to physical growth, maturation and aging in human action (motor development). The second is built upon the neurosciences and describes the neural structures, processes, functions and effects that undergo changes in performance through motor control. The third involves basic tenets upon which motor skill acquisition can be built, utilising relationships between sensory systems and objects, surfaces and events in the environment (motor learning).

1.3. Body of Knowledge

Motor behaviour includes the specialised areas of motor development, motor control and motor learning, each of which contributes to our understanding of the mental structures and processes that produce skilled human action (Coker, 2004). The field traditionally encompasses research concerned with how humans develop, learn and control complex motor skills. An increasing number of researchers are investigating the effects of anxiety, motivation, relaxation and other sport psychology topics on fundamental and developing neural and cognitive processes. The area includes the sequential, continuous age-related processes involved in human action (motor development), relatively permanent action changes not directly attributable to aging (motor learning) and the nervous system's control of muscles that produce skilled and coordinated action (motor control).

1.4. Methodology

The methods used for each of the specialised motor behaviour areas are distinct. Each of the areas includes research conducted in laboratory settings, using novel tasks that elicit simple responses or must limit the number of variables being investigated. This type of research has served as the basis

for more ecologically-based investigations. From this type of research, investigators have been able to determine performance-based characteristics of novice and elite performers in a variety of real-world environments. Additional types of ecologically-based research designs have been formulated, including the integration of motor development, motor control and motor learning to understand children with special challenges such as Downs Syndrome, Attention Deficit Hyperactivity Disorder (ADHD) and cerebral palsy.

Motor control and motor learning research designs include methods that directly measure human neural processes through the use of brain scanning devices such as EEG, PET, MRI and fMRI. They also include devices that record sensory movement, including eye tracking, auditory stimulus processing and tactile sensitivity.

Motor behaviour studies also include dynamic systems approaches by utilising mathematical, engineering, neural network, biomechanical and thermodynamic models to describe, analyse and interpret motor behaviour. Motor development studies may also include longitudinal investigations focusing on various parameters throughout portions of the lifespan.

1.5. Relationship to Practice

The field of motor behaviour provides detailed information for those in teaching, coaching, athletic training, sports medicine and rehabilitation, human factors and ergonomics, physiotherapy and other areas that seek information about the relationship between the brain and body and the effects of maturation on motor skill acquisition and performance. The motor behaviourist is a specialist who works collaboratively with others in sport science to answer complex questions involving the development, learning and control of human action at junctures throughout the lifespan.

1.6. Future Perspectives

During the last half of the 20th and into the 21st centuries, space research has been referred to as the 'final frontier'. We know more about sending humans into space to distant planets and space stations orbiting the earth than we know about the human brain and how it functions. Brain research and, specifically, brain research relating to motor behaviour, may well become 'THE frontier' for the first half of the 21st century, that will then develop related fields involving artificial intelligence, robots and human action in weightless environments. As new technologies are discovered, more investigations will be conducted about human perception, attention, memory, amount of learning, decision making and their roles in the continuous age-related processes involved in human action, relatively permanent action changes not directly attributed to aging and the nervous system's control of muscles that produce skilled and coordinated movement. In addition to these areas, other areas of research interest will include feedforward and feedback perspectives and anticipation, prediction and timing. Performance measurement of vision (perception and decision making) during human action will be of particular interest (Vickers, 2010), along with the development of instrumentation that is real-

time, accurate and valid. Future approaches to motor behaviour study will involve the inclusion of multi-disciplinary research teams focusing upon questions involving dynamics of space, time, the individual and action.

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2. Organisational Network

2.1. Major International Organisations and Networks

- International Society for Ecological Psychology (ISEP)
- International Society of Sport Psychology (ISSP)
- International Association of Applied Psychology (IAAP)
- Society for Neuroscience (SNS)
- Society for the Neural Control of Movement and Cognitive Neuroscience Society.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- Federation Eduopeene de Psychologie des Sports et des Activites Corporelles / European Federation of Sport Psychology (FEPSAC)
- North American Society for the Psychology of Sport and Physical Activity (NASPSPA)
- South American Society of Sport Psychology, Physical Activity and Recreation (SASSPPAR)
- American Optometric Association Sports Vision Section
- Australian Association for Exercise and Sport Science (AAESS)
- Canadian Society of Psychomotor Learning and Sport Psychology (CSPLSP)
- French Society of Sport Psychology (FSSP)
- National Association for Sport and Physical Education (NASPE) of AAHPERD – Motor Development/Learning Academy
- Cognitive Engineering Laboratory, University of Toronto, Canada
- Neuromotor and Psychology Laboratory, University of Calgary, Canada
- Neural Control Laboratory, University of Waterloo, Canada
- Marseille Movement et Perception Laboratory, Marseille, France
- Planck Institute for Psychological Research, Cognition and Action, Munich, Germany
- Motor Control Laboratory, University School of Physical Education, Katowice, Poland
- Center for the Ecological Study of Perceiving and Acting, University of Connecticut, USA
- Center for Complex Systems, Florida Atlantic University, USA
- Cognitive and Neural Systems, Boston University, USA
- Cognitive and Linguistic Sciences, Brown University, USA
- Haskins Laboratories, University of Connecticut, USA
- Human Performance Center, United States Air Force Academy, Colorado Springs, Colorado, USA
- Human Performance Center, United States Military Academy, West Point, New York, USA
- Motor Learning Laboratory, University of Virginia, Charlottesville, USA
- Motor Control Laboratory, Pennsylvania State University, USA
- Motor Behaviour Laboratory, Radford University, USA

- University of Maryland, College Park, Cognitive Neuroscience Laboratory, USA
- University of Michigan, Ann Arbor Motor Behaviour Center, USA.

2.3. Specialised International Degree Programmes

Presently, there appears to be no international degree programmes in the field. There are numerous PhD programmes located throughout parts of North America (Canada and the United States) and there are other programmes located throughout Europe and Australia. For example:

- McGill University, Canada
- Louisiana State University, USA
- University of Calgary, Canada
- University of Queensland, Australia
- University of Tennessee, USA
- University of Virginia, USA
- University School of Physical Education, Poland.

3. Information Sources

3.1. Journals

- *Adapted Physical Activity Quarterly*: <http://journals.humankinetics.com/apaq>
- *Applied Cognitive Psychology*: <http://www.interscience.wiley.com/jpages/0888-4080>
- *Behaviour and Brain Sciences*: <http://journals.cambridge.org/action/displayJournal?id=BBS>
- *Developmental Medicine and Child Neurology*: <http://www.interscience.wiley.com/jpages/0012-1622/>
- *Experimental Brain Research*: <http://www.springerlink.com/openurl.asp?genre=journal&issn=0014-4819>
- *Human Movement Science*: <http://sciencedirect.com/science/journal/01679457>
- *Human Perception and Performance*: <http://content.apa.org/journals/xhp>
- *Human Performance*: <http://www.tandfonline.com/openurl?genre=journal&issn=0895-9285>
- *International Journal of Sports Vision* <http://newcatalogue.library.unisa.edu.au/vufind/record/439368>
- *International Journal of Volleyball Research* <http://www.usavolleyball.org/grassroots/publications>
- *Journal of Experimental Psychology* <http://www.humankinetics.com/JSEP/journalAbout.cfm>
- *Journal of Exercise and Sport Psychology* <http://content.apa.org/journals/xhp>
- *Journal of Motor Behaviour* <http://heldref.metapress.com/openurl.asp?genre=journal&issn=0022-2895>
- *Journal of Neuroscience*: <http://www.informahealthcare.com/loi/hes>

- *Journal of Sport Sciences*: <http://tandfonline.com/openurl.asp?genre=journal&issn=0264-0414>
- *Motor Control*: <http://www.humankinetics.com/MC/journalAbout.cfm>
- *NeuroReport*: <http://content.wkhealth.com/linkback/openurl?issn=0959-4965>
- *Neuron*: <http://www.sciencedirect.com/science/journal/08966273>
- *Perceptual and Motor Skills*: <http://ammons.ammonsscienfitic.com/>
- *Research Quarterly for Exercise and Sport*: <http://www.aahperd.org/rc/publications/rqes/index.cfm>
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3.3. Book Series

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3.4. Congress/Workshop Proceedings

- *Current research in motor control*. (2000 – present) Polish Scientific Physical Education Association: University School of Physical Education in Katowice
- *Proceedings of International Joint Conference on Artificial Intelligence* (1996 – present)
- Proceedings of North American Society for Psychology of Sport and Physical Activity (2000 – present).

3.5. Data Banks

Main data banks used to locate works in motor behaviour are SPORT DISCUS and INDEX MEDICUS and are accessible via the internet, for a price.

3.6. Internet Sources

Motor Behaviour

- University of Auckland, New Zealand www.ses.auckland.ac.nz/
- University of Calgary, Canada, Neuromotor Psychology laboratory www.kin.ucalgary.ca/2002/profiles/neuromotor.asp
- Louisiana State University, Baton Rouge, USA <http://mb.lsu.edu>
- Purdue University, Lafayette, Indiana, USA www.cla.purdue.edu/hk/motorbehaviour/motor%20behaviour/Home.html
- Radford University, Radford, Virginia, USA www.radford.edu/~mobelab/motor_behaviour_laboratory_coordi.htm
- University of Memphis, USA www.umdive.memphis.edu/g-HSS/HSS_WEB/MBL/index.html
- University of Michigan, Ann Arbor, USA www.kines.umich.edu/research/cmbpd.html
- University of Michigan, Ann Arbor, USA, Center for Motor Behaviour and Pediatric Disabilities www.umich.edu/~cmbds/

- University of Tennessee, Knoxville, USA http://web.utk.edu/~sals/resources/motor_behaviour_laboratory.html
- University of Utah, Provo, USA www.health.utah.edu/clinics/motor.html

Motor Development

- Northwest University at Potchefstroom, South Africa, Kinderkinetics Clinic www.nwu.ac.za
- Purdue University, USA www.cla.purdue.edu/hk/discovery/infant.motor.htm
- University of Texas at San Antonio, USA http://kah.utsa.edu/research_facilities.htm#mdc
- University of Michigan, USA www.kines.umich.edu/research/chmr/motdev

Motor Control

- Arizona State University, USA www.asu.edu/clas/espe/MClab/motorcontrolwebpage.html
- McGill University, Canada www.psych.mcgill.ca/labs/mcl/Lab-Home.html
- Newcastle Motor Control Laboratory, UK www.staff.ncl.ac.uk/stuart.baker/
- Penn State Motor Control Laboratory, USA www.kinesiology.psu.edu/research/laboratories/mcl/index.html
- University of Maryland, College Park, USA www.hhp.umd.edu/KNES/research/cmb.html

Motor Learning

- Iowa State University, USA www.kin.hs.iastate.edu/research/
- Massachusetts Institute of Technology, USA <http://web.mit.edu/mcgovern/html/>

4. Appendix Materials

4.1. Terminology

The following definitions of terms have been selected from Coker (2004), Kluka, (1999), Magill (2011) and Payne and Isaacs (2011). Additional definitions can also be found in Schmidt and Wrisberg (2008), Haywood and Getchell (2009) and Lee (2011). See section 3.2. Reference Books, Encyclopedias etc.

- ability – a general trait or capacity of an individual that is a determinant of a person's achievement potential for the performance of specific skills
- action – a goal-directed activity that consists of body and/or limb movement
- attention cueing – a practice technique where the learner directs attention to a specific aspect of the skill during its performance as a whole
- attentional focus – process used to selectively attend to specific environmental information
- closed skill – a motor skill performed in which the context is very predictable
- contextual interference – interference resulting from switching from one skill to another or changing the context in which a task is practiced from trial to trial

- distributed practice – practice schedule where the length of rest between sessions or practice attempts is equal to or greater than the time devoted to the practice component
- feedback – information from the sensory system that indicates the status of a movement to the central nervous system
- fine motor skills – movements predominantly produced by smaller muscles or muscle groups
- gross motor skills – movements predominantly produced by larger muscles or muscle groups
- long-term athlete development – a training, competition and recovery framework for individuals at all stages of life
- massed practice – practice schedule where the amount of time allocated to rest between sessions or practice attempts is comparatively less than the time that is engaged in practice
- memory – the ability to store and recall information
- motor programme – an abstract representation of a movement plan, stored in memory, that contains all of the motor commands required for carrying out the intended action
- open skill – a motor skill that is performed in a dynamic environment
- performance – an act at a moment in time that involves execution of a physical skill practice structure/organisation
- schema – a rule or relationship that directs decision making when a learner is faced with a movement challenge
- speed/accuracy tradeoff – a trade-off that exists between speed and accuracy such that an emphasis on speed negatively impacts accuracy and vice versa
- tau – optic variable that provides time of contact information by taking the size of the retinal image at any position of an object's approach and dividing it by the rate of change of the image
- transfer – when the learning of a new skill or its performance under novel conditions is influenced by past experience with another skill or skills.

4.2. Position Statements

Not applicable.

SPORT ECONOMICS

Chris Gratton and Peter Taylor

1. General Information

1.1. Historical Development

Sport economics began in the 1950s in USA and the UK with development of two specialisms:

- Demand forecasting and valuing outdoor recreation, particularly using the travel cost method (Clawson, 1959)
- The economics of professional team sports, with analysis of demand determinants, supplier objectives, cartels and labour markets (Rottenburg, 1956).

In the 1960s and 1970s the discipline expanded its exploration of the economics of mass participation sport and recreation, particularly through the work of Cicchetti *et al.* (1969), Cicchetti (1973) in the USA and Vickerman (1975), Searle (1975) and Veal (1976) in the UK. This work concentrated on analysis of demand for sport and recreation participation and on government policy for mass participation, including the economic rationale for intervention in sport and recreation markets, particularly through valuations of free recreation participation (Hillman and Whalley, 1977; Mansfield, 1969, 1971; Rodgers, 1977; Settle, 1977). Meanwhile the economics of professional team sports gathered strength (Neale, 1964; Political and Economic Planning, 1966; Sloane, 1971; El-Hodiri and Quirk, 1971; Noll, 1974).

In the 1980s the collective economic analysis sport and recreation was consolidated through Gratton and Taylor (1985) whilst new areas developed such as the economic importance of sport (Henley Centre for Forecasting, 1986, 1989; Jones, 1989) and the economic impact of sport events (Ritchie, 1984; Economic Research Associates, 1984), alongside continuing studies in the economics of professional team sports (Sloane, 1980; Cairns, 1983; Cairns *et al.* 1986). Government agencies also began significant analyses of sport (Audit Commission, 1989).

In the 1990s and beyond, economic analysis continued in the previously identified areas, particularly the economics of professional team sports (Simmonds, 1996; Downward and Dawson, 2000; Dobson and Goddard, 2001; Sandy *et al.*, 2004) and the economic importance of sport in nations and the economic impact of major sport events (Turco and Kelsey, 1992; Crompton, 1995; LIRC, 1997; NSW Treasury, 1997). It also developed in domains such as:

- The economics of elite sport and major games, particularly the determinants of sporting success (Taylor 1993; Kasimati, 2003; Hoffman *et al.* 2004; De Bosscher *et al.* 2007; Preuss, 2004)
- The economics of sports volunteering (Gratton *et al.*, 1997; LIRC, 2003)
- The economics of sport sponsorship (Kolah, 1999).

1.2. Function

The fundamental purpose of sport economics is to understand the workings and failings of the market mechanism and to inform management decisions and policy makers of the implications of this understanding. To this effect analysis falls into three distinct categories:

1. Demand analysis
2. Supply analysis
3. Policy.

Demand Analysis

The objective of this analysis is to understand the causal relationships between independent determinants of demand and dependent demand variables. Much of this analysis is quantitative, with the purpose being to establish statistically valid and reliable estimates of the relationships. Such analysis is limited by the data sets available on both demand variables and independent determinants. For sports participation, for example, typically time-series data is available on participation in sport and frequency of participation, but not on duration or intensity of participation. Also typically, time-series data is available on demographic and socio-economic variables such as age, gender, ethnicity, disability, income, employment status, socio-economic class, housing tenure and car ownership; but not on prices, promotion intensity, or distance from appropriate facilities.

In the economics of professional team sports, the demand analysis is focussed on spectators and one of the objectives is to consider sport-specific factors as well as broader socio-economic and demographic influences. So, for example, demand analysis in professional team sports embraces the entrance prices to matches, the uncertainty of outcome of the matches, the attraction of star players and the effects of television broadcasting on live spectator demand. Another purpose of demand analysis in professional team sports has been to identify the determinants of television spectator demand (Downward and Dawson, 2000).

The understanding brought about by such quantitative analysis is sometimes used to build forecasting models through which future demand can be estimated and 'what if?' scenarios can be tested. This is particularly important when fundamental demographic and socio-economic variables change significantly over time, such as the age and ethnic structures of a country's population and its income inequality (Settle, 1977).

Supply Analysis

The objective of supply analysis is to identify differences in the performance of sports organisations in different competitive situations. In the economics of mass participation sport, much of the analysis has examined variations in the performance of sports facilities (Robinson and Taylor, 2003; Liu, Taylor and Shibli, 2007).

In the economics of professional team sports, analysis has concentrated on the competitiveness of

sport leagues and the efficiency of sports labour markets. The former interest is driven by the 'peculiar economics' of this activity (Neale, 1964) – whereas teams are competing against each other, it is in their interests not to have too much domination by one team. If such a monopoly were to exist, it would be self-defeating – they would have nobody to play against! This is the root to the importance of uncertainty of outcome in professional team sports. Furthermore, individual teams don't decide the number of matches they play – that is decided by the league.

Interest in professional team sports labour markets has largely been driven by historically tight regulation of the terms and conditions in this labour market (Fort and Quirk, 1995), with control over both the recruitment of players by teams and the payments to the players; and the recent move to enable players to be more free agents, with greater player power to determine moves between teams and negotiate their payments.

Policy

Many of the analyses of the economics of sport supply lead inevitably to recommendations for management decisions in sport suppliers. At a more aggregate level, analysis of government policy for sport, at local, national and international levels, has been driven by recognition of market failures and the consequent conflict between the principles of effective intervention and the practicalities of inefficiency in such intervention (i.e., government failure; Gratton and Taylor, 1991).

Much of the economics of sport policy begins with acknowledgement and evidence of a number of market failures (e.g., monopolies, externalities, public goods, merit goods and inequity). This, however, is just a gateway to a number of key issues, including the economics of direct government supply and methods of subsidising this supply; of regulating by laws the activities of non-government sports providers; of contracting government sport services to commercial and third sector suppliers; and of incentivising increases in sports participation and sports volunteering through government funding.

1.3. Body of Knowledge

Sport is an important sector of economic activity but when the phrase 'sport economics' is used, most people think of it as the analysis of the 'sports business', or the elite sector of the sports market that attracts large amounts of money through sponsorship, payments for broadcasting rights and paying spectators. However, this is a fairly small part of the total sports market. Over recent years many countries have estimated the money value of the broad flow of resources into and out of sport and such estimates indicate that the economic value of the recreational base of sport far exceeds that of the top of the sports hierarchy.

Figure 1 shows the hierarchical nature of the sports market, with the arrows representing flows of

money and in-kind contributions. The large triangle represents sports activity, around which sports policy is involved. Around the formal participation element, the smaller triangle, governing bodies (federations) of sport operate. A relatively small group of elite sports people at the top of the pyramid compete in national and international competitions. At this top level of sport money flows into sport from sponsorship, from paying spectators and from television companies eager to broadcast top level competition. Although this elite end of the sports market appears to be essentially commercial, it is also subsidised by government in order to 'produce' sporting excellence and international sporting success. Economics can help to both provide a rationale for and assess the cost effectiveness of such subsidy.

At the bottom end of the pyramid is recreational sport: people taking part in sport for fun, for enjoyment or maybe in order to get fitter and healthier. This is also subsidised by government but predominantly by local government through subsidies to sports facilities in the community and in schools. Again, economic analysis explores both the rationale for and the efficiency of such government intervention. Figure III.1 also identifies another important source of resources into sport, the voluntary sector. The resources the voluntary sector contributes to sport are massive, but the most important resource is the time that volunteers contribute to sport without payment and it is not an easy task putting a monetary valuation on this.

If the supply-side of the sport market is complicated, then so is the demand side. The demand for sport is a composite demand involving the demand for free time; the demand to take part in or watch sport; the demand for equipment, shoes and clothing; the demand for facilities; and the demand for travel.

In fact, market demand is even more complicated than this rather complex picture since Figure 1 only represents the flows into and out of a national sports market. Increasingly it is more appropriate to talk about the global sports market (Allison, 2005; Andreff, 2008; Gratton *et al.*, 2011; Giulianotti and Robertson, 2007; Giulianotti and Robertson, 2009). A small, but increasing, part of every country's sports market is international or global. There already exist sporting competitions that are of truly global dimensions: over two thirds of the world's population (over four billion people) watch some part of the global television coverage of the Olympic Games. The cumulative television audience for the football World Cup is normally over 40 billion. Although a major process of globalisation takes place at the elite end of the sport market, the bottom end of the market is provided for by global sport corporations such as Nike and Adidas, who provide the sports shoes, clothing and equipment that make up a large share of the sport market. Nike is a typical example, designing its sports shoes and clothing in Oregon, USA, contracting out the production of these products to factories in Thailand, Indonesia, China and Korea and marketing the products on a global basis.

The major globalising forces in sport have been: the increasing globalisation of media coverage of major sports events (e.g., Olympics, World Cup); the creation of new global sports events (Cricket World Cup, Rugby World Cup) driven by the eagerness of global sports organisations to promote their sport; global television coverage of what were formally domestic events (e.g., English Premier

League); global recognition of the top athletes competing in these events; and association of these athletes with global sports brands (e.g., Nike, Adidas). The characteristics of the global sports market that emerged are: escalation in the price of broadcasting rights to the top sports events; global marketing of major sports products by using images (not words) recognisable worldwide; sports celebrities becoming the most important part of these images; escalation in the price of sponsorship deals for both events and athletes by both sport (e.g., Nike, Adidas) and non-sport (e.g., Coca-Cola, McDonalds) sponsors.

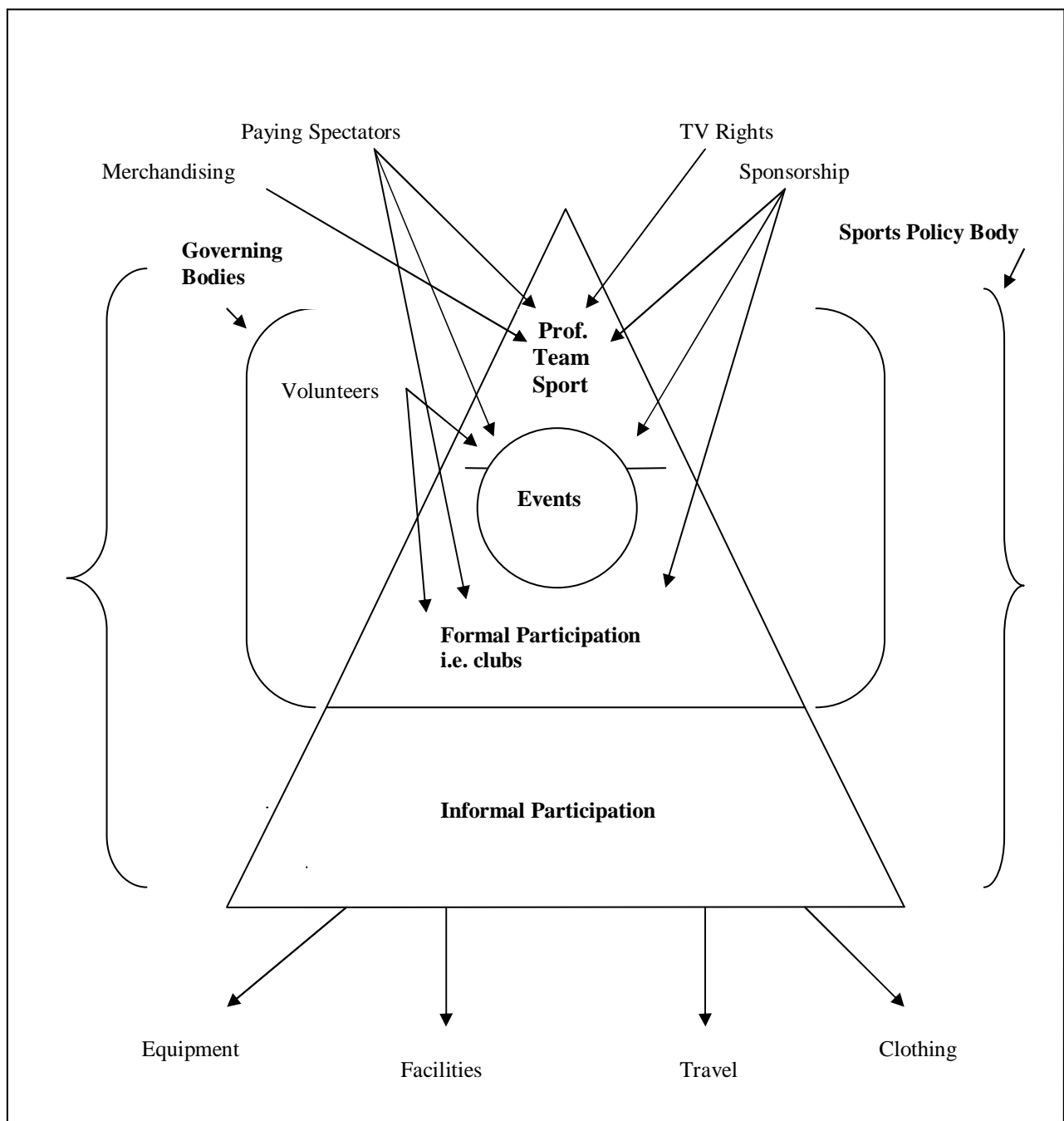


Figure 1: Sports Economics

1.4. Methodology

The standard economics methodology involves theoretical and econometric modelling using quantitative techniques, particularly regression analysis. This might involve originally derived primary research data sets, but more typically is conducted through secondary analysis of existing data sets. For analysis of the demand for professional sports teams, for example, there are collective records of results, prices and attendances. For recreational sport there are national surveys of participation, such as the Active People Survey in England, and aggregated evidence on the supply side, such as the CERM Performance Indicators database in Australia and the National Benchmarking Service data set in the UK. Much of the quantitative analysis of such data sets is based on a neoclassical market modelling approach.

Less typically, economics methodology will involve qualitative methods. This is more likely at the interface between economics and management analyses, with qualitative investigation of management structures, processes and decisions by economists.

1.5. Relationship to Practice

The economic analysis of demand for sport informs the management and particularly marketing decisions of supplying organisations. This is the case at the elite level, when considering sports spectators, or the recreational level, when considering sports participants. In particular, economics analysis informs the pricing decision, since price plays such a pivotal role in arbitrating between both sides of the market mechanism.

Economic analysis of sport supply takes much more varied perspectives. In the economics of professional team sports, analysis informs not only the decision-making of individual clubs, but also particularly the decision-making of leagues – the cartels that attempt to compromise between the financial success of their members and the equality of competition necessary to sustain interest in professional team sports. Economic analysis therefore contains fundamental implications for the recruitment of elite sports people, their transfer between clubs and their payment. In the economics of recreational sport, analysis informs the improved performance of supplying organisations, whether this is through improved effectiveness in reaching markets, or through improved efficiency of operations.

Economic analysis of sport also informs government policy, whether at the national or local level. In particular, at both elite and recreational levels, economics analyses the efficiency and effectiveness of government subsidies. It also provides tests of the rationale for such subsidies, particularly through economic impact analysis. Economic analysis can also be used to justify and test government regulation of sports activity. A recent example is the role of economics in examining the 'listing' of major sports events in the context of television broadcasting, i.e. the regulation that some events

must be shown by public broadcasters (Gratton and Solberg, 2007; DCMS, 2009).

Analysts trained in economics do not commonly work in the practitioner domain as sports economists; such people are more typically found in the academic domain. Nevertheless, many sports managers, consultants and policy makers will have received an education in economics, typically as part of a multi-disciplinary course rather than a specialist economics qualification. Economics provides skills in understanding the workings of, and problems with, the market mechanism, and in particular quantitative analysis of these issues. Many sports managers, for example, will grapple with the issue of setting a price for their product. Economics training will help such managers understand the complexities of price elasticity of demand.

1.6. Future Perspectives

It is not anticipated that any major shifts in the economic analysis of sport will occur in the near future, in terms of new areas of analysis. However, there are three areas of sport economics that are seeing dynamic change and it is anticipated that considerable attention will be paid by sport economists to these areas.

First, professional team sports are in a state of flux, particularly in the USA, because of rising player power. Player strikes and lockouts have become increasingly common and the labour market in this sector is worthy of continued analysis as players, unions, clubs and leagues all seek a compromise that does not threaten their individual interests.

Second, public expenditure cuts are an endemic and sustained feature of government in many countries, after the financial crisis of 2009. The consequences for government funding of sport at both national and local levels have not been fully worked through and economic analysis has a potentially important role in this process. An example is the contrast between those elements of public sector sport that react to the reduced public expenditure by cutting services, and those elements which react through more 'commercial' management in order to cut deficits. Another example is the potential shift in responsibilities for sport from governments to the 'third sector', comprising voluntary and charitable organisations and social enterprises. Economic analysis can help to identify the capacities of the third sector to undertake this increased responsibility, and the shape of support required for the third sector from the slimmed down government.

Third, globalisation of sports activity is likely to develop further, but not at the pace we have seen over the last 20 years. This is because most of the world already has access to the major sports events, the broadcasting of which has driven the globalisation process. The doubling and trebling of broadcasting rights for major sports events that we have seen since the early 1990s is unlikely to happen again.

Broadcasting rights for these events are also unlikely to decrease. Instead, they should remain fairly stable with further increases on a much smaller level than previously. Economic analysis can help to

identify the costs and benefits for national and international governing bodies of sport, sports leagues and governments alike of further developments in the global sport market.

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2. Organisational Network

2.1. Major International Organisations and Networks

- International Association of Sports Economists , <http://www.iasecon.net/>
- European Sports Economics Association, <http://www.sporteconomics.eu/>
- North American Association of Sports Economists, <http://byuresearch.org/NAASE/index.html>

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- Pan Hellenic Association of Sports Economists and Managers, <http://www.atiner.gr/docs/PASEM.htm>
- Sport England Research Collaboration Centre for Sport and the Economy, http://www.shu.ac.uk/research/sirc/rc_economics.html
- North American Society for Sports Management, <http://www.nassm.com/>
- European Association of Sports Management, <http://web.tiscali.it/easmorg/>
- Sports Management Association of Australia and New Zealand, <http://www.smaanz.org/>
- African Sport Management Association, <http://www.asma-online.org/>
- Japan Sport Management Association, <http://www.jasma.asia/>

2.3. Specialised International Degree Programmes

None, but locations for specialised sport economics degree programmes include Beijing Normal University, China, the German Sport University at Cologne, Germany and the University of Bayreuth, Germany.

3. Information Sources

3.1. Journals

- *Journal of Sports Economics* (USA)
- *Journal of Sport Management* (USA)
- *European Sport Management Quarterly* (UK)
- *Sport Management Review* (Australia)
- *International Journal of Sport Finance* (USA)
- *Managing Leisure* (UK).

3.2. Reference Books, Encyclopaedias

Andreff W. and Szymanski S. (editors) *Handbook on the Economics of Sport*. Edward Elgar, 2006.

3.3. Book Series

- Sports Economics, Management and Policy, editor: D. C. Coates. Springer (USA) <http://byuresearch.org/NAASE/sem.pdf>
- Sport Economics books published by Edward Elgar (UK) (no series editor).

3.4. Congress/Workshop Proceedings

- International Association of Sports Economists , <http://www.iasecon.net/>
- European Sports Economics Association, <http://www.sporteconomics.eu/>
- North American Association of Sports Economists, <http://byuresearch.org/NAASE/index.html>

3.5. Data Banks

Not applicable.

3.6. Internet Sources

- International Association of Sports Economists, <http://www.iasecon.net/>
- European Sports Economics Association, <http://www.sporteconomics.eu/>
- North American Association of Sports Economists, <http://byuresearch.org/NAASE/index.html>

4. Appendix Materials

4.1. Terminology

Not applicable.

4.2. Position Statements

Not applicable.

SPORTS LAW

Hazel Hartley

1. General Information

1.1. Historical Development

Sports Law is a relatively young sub-discipline in English Law, though it has a much longer and stronger history in the activities of academics and attorneys in the United States. Indeed in its formative years, it was often questioned whether such a discipline could genuinely be held to exist as a distinct and delineated subject area, or whether this could simply be regarded as being an instance of applied law (Boyes 2012:1).

Sports law has 'no juridical foundation; for common law and equity creates no concept of law exclusively relating to sport. Each area of law applicable to sport does not differ from how it is found in any other social or jurisprudential category..' (Grayson, 1990, cited Boyes 2012:1).

During the 1980s and 1990s a range of national and international sport law associations and associated journals were formed. These included the International Association of Sports Law (IASL), the International Sport Lawyers Association (ISLA), the British Association for Sport and Law (BASL), the Deutsche Vereinigung für Sportrecht (DVSR), the Society for the Study of Sport and Physical Activity (SSSPA), the National Sports Law Institute, Marquette University Law School, the Australia and New Zealand Sports Law Association (ANZLA). Also in 1980s and 1990s pioneers in sport and the law published texts and journal articles which applied a range of legal topics to sport contexts. Links were made between sports law and sports medicine, sports science and physical activity in case law, practice, teaching and research.

Sports Law has been described as being constituted by four types of law- domestic, national, regional and international (James, 2010, cited Boyes 2012:2). Between 2000-2010, developments in anti-doping and sport, negligence, risk, safe-guarding children, manslaughter, criminal assault on the sports field, European law and the increasing activity in the Court of Arbitration for Sport, attracted considerable attention from sports law academics. Such attention embraced texts with a thematic approach to sports law. Examples include Nafziger (2004), Cox and Schuster (2004) and a range of publications on the application of European law or Image Rights to sport contexts, such as Blackshaw and Seikmanns (2005), Parrish and Mietennnen (2008).

In this decade there were publications exploring a more multi-disciplinary approach, particularly in socio-legal work (McArdle 2000, Brackenridge (2001); Hartley (2001, 2009); O'Leary (2001). More recently, there have been significant developments around some legal aspects of sport business,

including Intellectual Property Rights, Trademarks/logos, ambush marketing, sponsorship, ticketing, especially in relation to major or mega-events such as The Olympics and Paralympics Games. By the end of 2011, there were approximately 26 sport and law associations worldwide and a range of undergraduate and postgraduate programmes, Ph.D. programmes and professional development events for both sport and law practitioners and sport federations.

The aims of academic sport and law vary but generally the intention is to:

- understand the legal principles, doctrines, statutes which are applied to sport and any sporting exceptions
- learn about the range of relevant case law in sport contexts
- reflect on the implications of the legal principles and cases in personal, voluntary, organisational and professional contexts in sport
- explore the historical development of sport and law and sports law in national or international jurisdictions
- appreciate the range of voluntary careers, work (voluntary and professional)
- gain work experience and employability knowledge
- pursue knowledge which links law with other academic disciplines e.g. socio-legal, medico-legal, sport science and law in sport
- research sport and law, learning about concepts, principles, methods and methodologies, paradigms
- identify key national, regional and international sport and law organisations and contribute at conferences or in discussion forums
- understand key debates and critiques around diversity, organisational culture, power relations in sport and law organisations or employers
- understand how to support and develop future generations of academic sports law and sports law practice.

1.2. Body of Knowledge

Although sports law 'has gained increasing attraction amongst both academics and practitioners, as an area of genuine interest and substance', in the formative years 'it was often questioned whether such a discipline could genuinely be held to exist as a distinct and delineated subject area, or whether this could simply be regarded as being an instance of applied law' (Boyes, 2012:1).

Each area of law applicable to sport does not differ from how it is found in any other social and jurisprudential category-when sport hits the legal and political buffers, conventional and ordinary principles affecting the nature of the appropriate sporting issue concerned including parliamentary legislation are triggered into action (Grayson, 1990, cited Boyes, 2012:1).

There is a wide range of areas of law applied to sport now established as contributing to a discrete subject area of sports law, including:

Constitutive Law, Administrative Law

The power and jurisdiction of sports federations, disciplinary procedures and issues, natural justice principles, procedural fairness, rights of athletes.

Civil Law

This area includes negligence in sport, the role of insurance, intentional trespass and civil assault, defamation, libel, nuisance in sport contexts.

Diversity, Equality and Discrimination in Sport

This area embraces a wide range of topic areas including equality and diversity theory and research, statutes covering discrimination, harassment, case law, anti-discrimination policies in sport in clubs and federations. It draws upon contracted research, task force reports, policy reviews at government level, as well as relevant European Commission Directives and Human Rights Conventions. There are opportunities for strong links with sociology, policy and philosophy of sports science.

Risk Assessment

Risk Assessment, Statutory Regulation in health and safety, risk management. This area might include consideration of child protection, and more recently, safeguarding children and vulnerable adults. Risk management is a key feature of sport event management. An emerging area of study is extreme sports which is also attracting attention from socio-cultural or socio-legal academics.

Criminal Assault and Sexual Assault

Sport violence as a contested concept. Common assault, Offences Against the Person Act 1861 and relevant Criminal Codes. Discussions and analysis of self-defence, reasonable chastisement, initiation rites. (e.g. Hartley 2009, Young 2012). Sexual violence- sexual exploitation and sexual assault and analysis of risk at individual and organisational levels in competitive sport contexts (e.g. Brackenridge 2001).

Individual and Corporate Manslaughter, Legal Assets of Disasters

Health and safety duties of sport corporations/bodies. Relevant Statutes, EC or other Health and Safety Directives. Individual and corporate manslaughter in a sport or leisure context. Development of the law of corporate manslaughter, (e.g. Hartley 2001, 2009; Tombs and White 2008). The legal processes related to disasters and their social and political context (e.g. Scruton 2000).

Arbitration, Dispute Resolution Mechanisms in Sport

National Dispute Resolution Processes and organisations. The Court of Arbitration for Sport, ordinary, appeal, mediation panels. The *ad hoc* Division of the CAS at the Olympics and Paralympics and other major sport events.

Anti-doping in Sport

Anti-doping rules policies, rules, procedures. WADA, the WADA Code and Prohibited List, National Anti-

Doping Panels or Agencies. Philosophical and sociological critiques of anti-doping policies and rules. Legal analysis of strict liability principle, fault/mitigation rules, Whereabouts Information, the 'Open List'. The links between law and sports science, sports medicine, biochemistry, bio-ethics and sociology play a key role in the development of knowledge in anti-doping in sport.

Harmonisation of sport rules- domestic, international, European Law and policy applied to sport, potential and actual legal challenges against sports rules and related penalties, Human Rights Articles, debates around the contested 'special' nature of sport.

Employment Law or Labour Law

Contract law, unfair dismissal, admissions and selection processes, positive discrimination, collective balance, freedom of movement, player transfers, case law from *Bosman* to *Kolpak* in European Law and other jurisdictions.

Media Law

Media law and legal aspects of sport marketing- including television broadcasting rights, sponsorship, ambush marketing, IP rights, trademarks for sport logos, sports brands. Olympic and Paralympic law. An emerging and significant area is the use of social media by corporations, sport governing bodies and individual players or competitors.

Medico-legal Discourse

Medico-legal discourse or in other words medical research on spinal injuries influencing the revision of safety rules in rugby union, anti-doping in sport, violence in sport, sports medicine and the law, disability categorisation and sport cases such as *Pistorius v IAAF* 2008, *PGA Tour v Casey Martin* 2001 and Sex Discrimination or eligibility matters in sport, including *Couch v BBBC* 1998 and the Caster Semenya case.

1.3. Methodology

Methodologies and methods employed in sport and law research and literature vary depending upon the research questions, topic, context and the academic disciplinary lens or lenses being used (e.g. medico-legal, socio-legal, sociological, policy and law). Compared to other academic disciplines or fields there are less empirical data collection methods. Examples include:

- Summaries and critical analysis of legal principles and doctrines
- Case Commentaries of civil, criminal and other case law in sport- context, case evidence, decision, reasons, implications for sport participants, clubs, organisations, employers

- Empirical data collection, field work using interviews, focus groups, surveys, scientific experiments, observations including video analysis (e.g. in sport violence topics), content analysis, document analysis.

1.4. Relationship to Practice

Ways in which academic sport and law is applied to practice include:

- Research Reports used by practitioners in sport, use of the work of sport and law academics in legal cases and judgments
- Lessons from case law and literature used in teaching and continuing professional development
- Collaborative partnerships between sport and law academics, practitioners and governing bodies or employers in sport contexts,
- Published work – print, on-line, internet used by sport participants, players, clubs, employers, sport governing bodies, corporations, public bodies, Local Authorities, Government Departments, campaigners and activists in sport
- Use of legal principles, statutes and case law by volunteers, professionals and organisations in sport
- Involvement of sport and law academics and practitioners in legal reform, Law Commission Reviews, Public or Government Consultations, Senate Hearings or parliamentary Committees.

Career Opportunities in sport and law contexts include:

- Solicitor or barrister in law firms
- Solicitor or barrister in public bodies or Local Authority or Government Departments
- In-house lawyer/solicitor in sports federations or companies
- Lecturer or lecturer in further or higher education
- Private Consultant in a legal area or areas relevant to sport
- Legal advisor in professional sports bodies or clubs
- Legal/governance officer in a sports federations, clubs or corporations
- Legal officer/advisor in voluntary bodies or campaign/activist groups
- Legal Officer/lawyer in sport policy/administration context e.g. anti-doping, Olympic or Paralympics Associations.

1.5. Future Perspectives

Emerging topics likely to receive attention from sports law academics and practitioners in the near future include:

- Legal aspects of use of social media in sport contexts. Issues around players, coaches, managers, employees engaging in social networking activities, disciplinary proceedings, police investigations and criminal prosecutions
- Corruption in sport-match fixing and spot fixing across a range of sports, in particular, cricket, soccer, horse-racing and regulation of internet betting outside national jurisdictions. The development of international or regional anti-corruption codes in sport
- Anti-doping in sport
- USADA Report (2012) and legal processes related to the Lance Armstrong/ US Postal Cycling Team doping issues, the review of the WADA Code, issues around tests for human growth hormone, the Athlete Biological Passport and gene doping
- Image Rights, ambush marketing particularly in relation to The Olympics and Paralympics
- Risk issues in extreme sports and outdoor adventure contexts
- Popular Culture, law and sport
- Concussion Management in contact sports
- What should we be thinking about and encouraging in the future in sports law?
- Workforce profiles and narratives of career development in sport and law
- Diversity and organisational culture in our own sport and law associations and workplaces
- Olympics and Paralympics legacies in sport and law
- Multi and inter-disciplinary enquiry in sport and law
- Collaborations between sport law academic and sport law and sport practitioners
- Systematic development of research in sport and law, particularly Doctoral programmes and the next generation of sport law academics and practitioners.

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- Cox, N., and Schuster, A., (2004) *Sport and Law*. Dublin: First Law.
- Grayson, E. (1999) *Sport and the Law* London: Butterworths.
- Hartley, H.J. (2001) *Exploring Sport and Leisure Disasters: socio-legal perspectives* London: Cavendish Law Publishing.
- James, M. (2010) *Sports Law* Basingstoke: MacMillan.
- McArdle, D. (2000) *From Boot Money to Bosman: Football Society and the Law* London: Cavendish Law Publishing.
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- O'Leary, J. (ed) (2001) *Drugs and Doping in Sport: a socio-legal perspective* London: Cavendish Law Publishing.
- Parrish, R., and Mietennnen, S. (2007) *The Sporting Exception in European Law* The Hague: TMC Asser Press.
- Tombs S. and Whyte, D. (2008) *Safety Crimes*. Portland, OR: Willan Publishing.

Van der Smissen, B. (1990) *Legal Liability and Risk Management for public and private entities-sports and physical education, leisure services, recreation and parks, camping and adventure activities*. Cincinnati, OH: Anderson.

Young, K. (2012) *Sport, Violence and Society* London: Routledge.

2. Organisational Networks

2.1. Major International Organisations and Networks

International Association of Sports Law (IASL), Athens, Greece, at:
www.iasl.org

International Sports Lawyers Association (ISLA), Zurich, Switzerland, at:
www.isla-int.com

World Leisure Law and Policy Commission at:
<http://www.worldleisure.org/>

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

American Bar Association
www.americanbar.org
e-mail: teresa.ucok@americanbar.org

Arbeitsgemeinschaft Sportrecht im Deutschen, Germany at:
www.anwaltverein.de

Association Suisse de Droit du Sport (ASDS) at:
www.ASDS.CH
e-mail: t.schutz@unibas.ch

Black Entertainment and Sports Law Association at:
www.besla.org

British Association for Sport and Law (BASL) at:
www.britishsportslaw.org

Centre de Droit et d'Economie du Sport, Lemoges, France at:
<http://www.sdes.fr>

Deutsche Vereinigung für Sportrecht (DVSR), Konstanz, Germany at:
www.vereinigung-sportrecht.de

National Sports Law Institute (NSLI), Milwaukee, WN. USA at:
<http://law.marquette.edu/>

Societa Italianna di Diritto Sportiva (SIDS), Rome, Italy:
e-mail: m.coccia@cdaa.it

Polskie Towarzystwo Prawa Sportowego (PTPS), Poznan, Poland, at:
www.staff.amu.edu.pl

Sport Law and Strategy Group at:
<http://www.sportlaw.ca/>

Sport and Recreation Law Association (SRLA) Milwaukee, WN, USA at:
<http://srlaweb.org/>

Sports Law and Welfare Association of India at:
www.sportslawindia.info

The Australian and New Zealand Sports Law Association (ANZSLA) at:
www.anzsla.com.au

Russian Association of Sports Law
Contact abrilliantova@roc.ru

South Africa Sports Law Association (SASLA) Durban, South Africa
contact: steve.cornelius@up.ac.za

The Korean Association of Sport and Entertainment Law (KASEL), Soeul, Korea at:
www.lawlawyer.net

Specialised Centres/Research Centres

Erasmus University Rotterdam, with sports law summer schools at:
www.esl.eur.nl
contact seikmann@law.eur.nl

International Sports Law Centre, Asser Institute, The Hague, Netherlands at:
<http://www.asser.nl>

International Sports Law Centre, based at Staffordshire University UK and Thompson Rivers University, Canada, at:
<http://www.staffs.ac.uk/faculties/law/cisl/>
Contact k.m.lines@staffs.ac.uk
And John Heshka e-mail address jheshka@tru.ca

Sports Law Centre, University of Pretoria, South Africa at:

<http://web.up.ac.za>

contact Rian.Cloete@up.ac.za

Sports Law centre of Shandong University, China at:

www.sportslaw.cn

Sports Law Research Centre, Milan, Italy (Director Prof. Aw.Lucio Colantuoni e-mail at lucio.colantuoni@sportslawrc.com

www.sportslawresearchcenter.com

The Russian International Olympic University at Sochi, Russia at:

www.olympicuniversity.ru

2.3. Specialised International Degree Programmes

Marquette University Law School, Milwaukee, Wisconsin, USA.

LLM Sports Law at:

<https://law.marquette.edu/programs-degrees/llm-sports-law-0>

De Montfort University, Law School, Leicester, UK at:

LLM in Sports Law and Practice (distance learning) at:

www.dmu.ac.uk/llmm

MSA Masters in Sports Administration, including sport law at The Russian International Olympic University, Sochi, Russia, at:

www.olympicuniversity.ru

M.A. Sport, Law and Society at:

<http://www.leedsmet.ac.uk>

http://courses.leedsmet.ac.uk/sportlawsociety_ma

contact I h.hartley@leedsmet.ac.uk

LLM Sport and Law,

Nottingham Trent University, UK at:

<http://www.ntu.ac.uk>

ISDE Master in International Sports Law, Madrid, Spain at:

<http://www.isdemasters.com/node/49>

Graduate Diploma in Sports Law and Masters in Sports Law
University of Melbourne at:
<http://www.law.univmel.edu.au/>

LLM International Sports Law
Staffordshire University, UK at:
<http://www.staffs.ac.uk>
e-mail contact k.lines@staffs.ac.uk

3. Information Sources

3.1. Journals

African Sports Law and Business Journal at:
www.africansportslawjournal.com

Entertainment and Sports Law Journal, UK, Warwick University at:
<http://www2.warwick.ac.uk/fac/soc/law/elj/eslj/>

Entertainment and Sports Lawyer (publication of the American Bar Association) at:
<http://www.abajournal.com/blawgs/topic/entertainment+sports+law>

European Sports Law and Policy Bulletin at:
<http://www.slpb.eu/bulletin.htm>

International Sports Law Journal at:
<http://www.asser.nl>

International Sports Law Review at:
http://iasl.org/pages/en/sports_law_iasl_journals/pandektis_publications.php

Journal of Sports and Entertainments Law, Harvard Law School at:
<http://harvardjsel.com>

Marquette Sports Law Review, Marquette University Law School, National Sports Law Institute at:
<http://law.marquette.edu/>

Outdoor Education and Recreation Law Quarterly
<http://www.lawquarterly.com/>

Recreation and Parks law Reporter and Journal of Leisure Research (publication of the National Recreation and Park Association) at:
<http://www.nrpa.org/>

Seton Hall Journal of Sport Law (publication of the Seton Hall University School of Law, 111 Raymond Blvd, Newark, NJ 07102 USA at:

<http://law.shu.edu/Students/academics/journals/sports-entertainment/Issues/current/index.cfm>

Sport and the Law Journal at:

<http://www.britishsportslaw.org/journal/default.asp>

Sport und Recht (SpuRt) Munchen, Germany at:

www.spuRt.de

The Australia and New Zealand Sports Law Journal at:

<http://www.anzsla.com.au/node/26>

The Sports Lawyers Journal at:

<http://www.sportslaw.org/publications/journal.cfm>

List of sports law journals mainly located in the USA at:

http://stu.findlaw.com/journals/art_sports.html

The International Platform of Sports Law Journals at:

www.sportslawjournals.com

World Sports Law Report at:

<http://www.e-comlaw.com/world-sports-law-report/>

3.2. Reference Books, Encyclopaedias etc.

Anderson, J. (2010). *Modern Sports Law*. Oxford: Hart.

Anderson, J. (ed) (2013) *Landmark Cases in Sport Law* The Hague: TMC Asser Press.

Anderson, P., Blackshaw, I., Seikman, R., Soek, J.W. (2011) *Sports Betting: Law and Policy* The Hague: TMC Asser Press.

Beloff, M., Kerr, T., and Demetriou, M. (1999) *Sports Law* Oxford: Hart.

Blackshaw, I. (2011) *Sports Marketing Agreements: Legal, Fiscal and Practical Aspects* The Hague: TMC Asser

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Carnelley, M., and Cornelius, S. (2012) *Gambling and Sport in South Africa*. Print.

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Corbett, R., Findlay, H., and Welch, D. (2008) *Legal Issues in Sport Tools for Managers*. Toronto: Edmund Montgomery Publishers.

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- Jackson, J. and Heshka, J. (2010) *Managing Risks: Systems Planning for Outdoor Adventure Program*. Ottawa: DBI.
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- Louw, A.M. (2012) *Ambush Marketing and The Mega Event Monopoly-how laws are abused to protect the Commercial Rights of Sport* The Hague: TMC Asser Press.
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- Young, K. (2012) *Sport, Violence and Society* Abingdon: Routledge.

3.3. Book Series

Kumar, A. (ed) (2011) *Governance of Sports in India*. Sports Law India Knowledge 1.

Kumar, A. (ed) (2011) *Sports Dispute Redressal in India*. Sports Law India. Knowledge 2.

Kumar, A. (ed) (2011) *Know all about Dope*. Testing Procedures and Rules. Sports Law Knowledge 3.

3.4. Congress/Workshop Proceedings

Most of the National, Regional and International Sport and Law Associations mentioned in this document hold conference proceedings.

3.5. Data Banks

- Lawtel
- Westlaw Journals
- Lexis Nexis
- Nexis Newspapers
- Find Law.

3.6. Internet Sources

Hartley, H.J. (2003, 2012) *Sport and Law Resource Guide*, Higher Education Academy (HEA), Hospitality, Leisure, Sport and Tourism Subject Centre at:

http://www.heacademy.ac.uk/assets/hlst/documents/resource_guides/sport_law_guide1.pdf

Sports law blogs

World Sports Law Report blog at:

<http://e-comlaw.com/sportslawblog/template>

Jack Anderson blog at:

<http://blogs.qub.ac.uk/sportslaw/>

'The Sports Law Canary' blog at:

http://www.staffs.ac.uk/faculties/law/cisl/the_sports_law_canary/

Marquette University Faculty blog at:

<http://law.marquette.edu/facultyblog/category/sports-law/>

Sports Law Forum at:

<http://sportslawnews.wordpress.com/>

Phil Gibbs sports barrister, London, see blog at:
Gibbs.barrister@blogsport.com

Front Row Legal, Leeds at:
<http://www.frontrowlegal.com/blogs/>

Italian Sports Law Blog at:
<http://www.lawinsport.com/blog/italian-sports-law-blog>

4. Appendix Materials

4.1. Terminology

Not applicable.

4.2. Position Statements

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Further Remarks/Suggestions:

It is very interesting to follow the people, organisations and incidents in sport and law contexts e.g. find:

- Five sport and law academics from each continent- profiles, research interests, publications.
Consider diversity of representation
- Five sport and law blogs

-
- Profiles of five sport lawyers from six countries
 - Collect websites of 20 sport and law firms in your country
 - Press releases from sport clubs, governing bodies, law firms, government departments
 - News websites for incidents and events in sport. Search for examples of the involvement of sport and law academics or practitioners in legal reforms, policy reforms, reviews, Senate Hearings, Parliamentary Select Committees, public consultations, and look for opportunities to make a contribution yourself to such processes.

SPORT MANAGEMENT

Berit Skirstad and Gerhard Trosien

1. General Information

Sport management is a growing field, worldwide. The globalization of the sport industry has increased the complexity of the tasks of sports managers. Today there are international organisations and federations organising world championships in different sports, and every sport has an annual calendar of competitions nationally, as well as internationally. Even sport-for-all is organised within umbrella organisations. So, planning, organising, implementing, executing and controlling are management tasks that belong to all sports.

1.1. Historical Development

Sport in Europe has a long tradition with voluntary sport clubs organised in non-profit sports associations. The managers or leaders of the sport organisations had honorary positions, and even in the international umbrella organisations this was the case. This was also true of the International Olympic Committee (IOC). Here, an amateur rule for athletes existed until 1981, and only those who were considered amateurs (i.e., were not paid) had the possibility to participate in the Olympic Games. The sport organisations were governed following the same philosophy, with amateurs (volunteers) elected for special jobs on honorary basis. At that time there were very few paid positions.

In the middle of the 20th century there were ideas to professionalise sports in the US, and the first systematic special education in sport management started. The different sports showed different pathways towards professionalization. Football and boxing were among the earlier sports to professionalize. Former elite athletes (mainly men) were used as functionaries, coaches, agents to organise the competitions and leagues. Within the US Major Leagues, there was a great demand for specialists, too, but until the 1960s, no administrative sport education was available.

The first programme of training for managers for professional sports started by Dr James G. Mason at Ohio University in 1966, and the idea came originally from the President of the Brooklyn Dodgers, ten years before (Parks, Zanger and Quarterman, 1998). Before that several universities in the US had been offering programmes in athletics administration. The academic sport management study was developed by Dr Earle Ziegler in the 1960s at the universities of Michigan, Illinois and Western Ontario (Chelladurai, 2001). Soon, other universities followed this trend because it was also a way to attract new students. Eventually, sport management courses found themselves in business schools or at universities connected to the sport sciences or physical education.

In Europe, Loughborough University (UK) opened a recreational management study in the early 1970s and had an undergraduate programme by the early 1980s. In the early 1990s it became MSc Sport and Leisure Management and then four years later MSc Sport (I. Henry, personal communication, September 9, 2011). In the 1980s studies were introduced as STAPS (Sciences et techniques des activités sportives) (in Caen, Lyon, Montpellier, Paris-Orsay, Rouen, Strassburg and so on) in France. In Germany, in addition to these developments, the Bayreuth University began a continuation study of two semesters with subjects of 'Sport and Law' and 'Sport and Administration' in the year 1981 and a full study in 1985. In Norway the first one-year study of sport management started in 1987. The terms used for the study today are 'Sport Management', 'Sport Administration', 'Sport Business' and/or 'Sport Economics', and all exist side-by-side.

In the 21st century there are many people employed in sport organisations as diverse as sport events, sport broadcasting, sport facilities, marketing, professional sport, coaching and in the connected industries making equipment, sport clothing as well as footwear and retail.

1.2. Function

Sport management can be defined as 'a field concerned with the coordination of limited human and material resources, relevant technologies and situational contingencies for the efficient production and exchange of sport services' (Chelladurai, 1994, p. 15).

Today, sport management is a profession. In order to belong to a profession, the field needs to fulfil three criteria: a) have an education; b) have an association; and c) a journal (Chelladurai, 2005). Sport management exists at Bachelor, Masters and Doctoral levels.

AEHESIS project (Aligning a European Higher Education Structure in Sport) made an overview of Sport Management in Europe (Petry, Froberg and Madella, 2004). The focus of sport management as an academic discipline is to prepare managers with the skills necessary to provide leadership and direction for sporting organisations at all levels of organisations worldwide. This knowledge includes how sport organisations function at the various levels, legal matters including contracts, sports politics, sport facilities, organisational understanding, project management, marketing and sponsorship-related strategies, financial strategies and strategies to increase spectator attendance, sport consumption and sport participation.

1.3. Body of Knowledge

Sport management is essentially an inter-disciplinary body of knowledge with programmes in institutions of higher education around the world, linked either to education in physical education, sport science, or business. General knowledge of management and sport management is important. Vocational training is another way to obtain knowledge in sport management. Internship is often combined within academic study to improve the knowledge of the students.

Studies

There are many pathways into general management within academic frameworks. These general insights are transferred to sport management matters from the established mother disciplines. Some studies try to apply the whole management knowledge and others, such as sport marketing, target sport tourism, golf management, football management, facility management, etc.

Vocational Sport Management Trainings

In different countries sport management training programmes are possible without academic study. A broad variety of two or three years' vocational training are offered with recognised certification. Young people can start in sport organisations on lower sport management levels, and learn on the job.

Internships

Within the huge field of sports, there are nearly no limitations with regards to internships, nationally or internationally. Many sport management studies also include internships of varying lengths in sport organisations, such as sport clubs, sport associations and sport federations. Of course, sport goods producers and retailers, sport agencies and other sport services, sport media and sport sponsors are also relevant as places for internships.

1.4. Methodology

Quantitative and qualitative methods are used in management sciences as well as mixed methods, which apply the use of both quantitative and qualitative research methods (Denzin and Lincoln, 2011). Surveys dominated in the early research and were used to describe and better understand the practices of what was a relatively new field. Marketing research, in particular, employs both survey methods and focus group work to better understand consumer buying patterns and behaviours. Methods are much more sophisticated now in using qualitative data analysis techniques, such as phenomenological and interpretive methodologies, case studies, ethnographic investigations, feminist perspectives, grounded theory and action research.

Research helps to explain how non-profit sports organisations, for-profit sports organisations and public sports organisations function and relate to each other. Sport clubs are often placed in the triangle between all the three sectors in society (the market, the state and the neighbourhood).

1.5. Relationship to Practice

The purpose of analysing, researching and teaching sport management is to improve practice. Sport management holds and prepares tools to make the work systematic and to give insights in this special matter. A macro-economic study about the effects of mega-sport events makes clear what costs and benefit comes from these. The growth of sport branches on national and international level can show

how important offers and demands are and how bidding about sport events can influence city or municipal developments. But on a micro-economic level, too, one has to understand the demands of consumers for sport equipments, sport on TV, or in arenas and stadia. Studies can help to understand brand management, and the risks when action or extreme sports become more popular. Social and ethical questions are also important for sport managers. Internship makes the field especially close to practise.

1.6. Future Perspectives

The sport world is changing rapidly. The information flow leads to the possibility of an exchange of data in 'real-time'. So, the dreams and needs of becoming sport heroes or sport leaders exist everywhere in the world. The needs increase when sport talents of one nation are transferred to a club or league in another country; see sport stars like David Beckham, like Dirk Nowitzki, like Yao Min and many others. These 'role models' belong to our popular culture and to the entertainment industry. Many sport managers focus on international jobs, which require a special sport management competence.

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2. Organisational Network

To improve the knowledge in the different fields of sport management it is vital to create networks, to cooperate within international projects and to publish together.

2.1. Major International Organisations and Networks

The 'International Alliance' is an umbrella with continental associations for sport management as members: NASSM – the North American Society for Sport Management; EASM – the European Association for Sport Management; SMANZ – the Sport Management Association of Australia and New

Zealand; and AASM – the Asian Association for Sport Management. Every fourth year they organise an International meeting at one of the member's conferences and then rotate. Exchange of ideas and cooperation are the main aims of this alliance.

- EASM: the European Association for Sport Management founded in 1993, founded the *European Journal of Sport Management* in 1994, which changed its name to *European Sport Management Quarterly* in 2000. www.easm.net
- NASSM: the North American Society for Sport Management founded in 1985 established the *Journal of Sport Management* in 1987. www.nassm.com
- SMAANZ: the Sport Management Association of Australia and New Zealand, founded in 1995, established in 1998 the journal *Sport Management Review*. www.smaanz.cadability.com.au
- AASM: the Asian Association for Sport Management. www.sport.gov/aasm
- ASMA: the African Sport Management Association. www.asma-online.org
- ALGEDE: the Latin American Sport Management Association. www.algede.org
- WASM: World Association for Sport Management, was established in 2012 and consists of all the above mentioned organisations.

2.2. Relevant Regional and National Organisations and Networks or Specialised Centres

- ASMS (Schweizer Vereinigung der Sportmanager) founded in 1996
- Spooek (Arbeitskreis Sportökonomie in Deutschland) founded in 1997 www.ak-spoek.de
- NAASE (North American Association of Sports Economists)
- China: The Chinese Association for Sport Management
- France: Société Française de Management du Sport
- Greece: Hellenic Association of Sports Management
- Italy: SIMS (Società Italiana di Management dello Sport)
- Japan: The Japanese Society of Management for Physical Education and Sport
- Korea: Korean Institute for Sports Marketing
- Portugal: APOGESD: Associacao Portuguesa de Gestao de Desporto
- South Africa: South Africa Society for Sport Management
- Spain: KAITI
- Sweden: Swedish Association for Sport Management
- Switzerland: Association Suisse des Managers du Sport
- United Kingdom: British Institute of Sports Administration.

2.3. Specialised International Degree Programmes

- AISTS (International Academy of Sports Science and Technology in Lausanne, Switzerland) was founded in 2000 by the International Olympic Committee (IOC), the Ecole Polytechnique Fédérale de Lausanne (EPFL), IMD Business School, the University of Lausanne, the University of Geneva, the Swiss Graduate School of Public Administration (IDHEAP), Ecole Hôtelière de Lausanne (EHL), the City of Lausanne and the Canton of Vaud. <http://www.aists.org/>
- CIES (Centre international d'étude du sport, International Center for Sport Studies) organises FIFA Master endorsed by the International Football Association (FIFA), and was created to promote management education within the sport world. It has developed to become a graduate programme developing all-round managers who can cope with the increasingly complex world of sport. http://www.ceed.co.uk/ceed/swiss/international_center_for_sports_studies.htm <http://www.fifa.com/aboutfifa/footballdevelopment/education/cies/fifamaster.html>
- MEMOS (Executive Masters in Sport Organisations Management) <http://www.gov.ch/idheap.nsf/vwBaseDocuments/IdActHomepage?OpenDocument&lng=en>
- SOMIT (Sport Organisation Management Interactive Teaching and Learning) by *IDHEAP University Lausanne (Project Leader)*, with the *Universities of Freiburg and Bern*, *Eidgenössische University of Applied Sciences for Sport Magglingen* and *Swiss Olympic Association, Bern*. The content is divided into four blocks: Sport and Management, Management Model for NGOs, Resources and Management for Sport Organisations and Marketing in Sport Organisations. The course is offered in three languages: German, French and English. http://www.somit.ch/pps_ppt/e_visit_nov02.ppt
- SSMC (Swiss Sport Management Center) was founded 2007 by Swiss Olympic, BASPO, IDHEAP and VMI. The aim was a homogenous education for sport management besides a job and (since 2008) a Masters of Advanced Studies (MAS) in Sport Management under the centralised administration of VMI of the University Freiburg/CH. <http://www.ssmc.ch/pub/index.php>

3. Information Sources

3.1. Journals

- *European Sport Management Quarterly* (ESMQ) (formerly *European Journal for Sport Management*) – Published five times a year – the official journal of EASM, Routledge, Taylor and Francis Group, UK
- *International Journal of Sport Management* (IJS) – American Press Publishers, Published quarterly: <http://www.americanpresspublishers.com/IJS>
- *International Journal of Sports Marketing and Sponsorship* – Winthrop Publications Limited – Published quarterly – <http://www.imrpublications.com>
- *International Journal of Sport Finance* – <http://www.ijsf.wordpress.com>
- *Journal of Sport Management* (JSM): North American Society for Sport Management – Human Kinetics – Published six times a year – <http://journals.humankinetics.com/jsm>

- *Journal of Sports Economics* (JSE) <http://www.jse.sagepub.com>
- *Journal of Sponsorship* (JoS)
- *Revue Européenne de Management du Sport* – Presses Universitaires du Sport.
<http://www.acteursdusport.fr/199-rem>
- *Sciamus – Sport und Management* (<http://www.sport-und-management.de>)
- *Sport Business* (<http://www.sportbusiness.com>)
- *Sport Business Daily* (<http://www.sportsbusinessdaily.com>)
- *Sport Management* (<http://www.sportmanagement.co.uk>)
- *Sport Management Education Journal* – NASSM and NASPE. New joint refereed publication of the North American Society for Sport Management (NASSM) and the National Association for Sport and Physical Education (NASPE) – <http://www.nassm.com/InfoAbout/SMEJ>
- *Sport Management Review* – Sport and Management Association of Australia and New Zealand) – http://www.elsevier.com/wps/find/journaldescription.cws_home/716936/description
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3.3. Book Series

- *Sport Management Series* by Elsevier, Butterworth-Heinemann: so far four books have been published in the series on Sport Governance, Sport and the Media, Sport Funding, Finance and Managing People in Sport Organisations. The Sport Management Series provides texts for sport management courses with case studies, useful study questions and lists of further reading. http://www.elsevier.com/wps/find/bookdescription.cws_home/BS_S776/description#description
- *Schriftenreihe des Arbeitskreises Sportökonomie* (Autumn 2011 = 13 books) Hofmann Verlag, Schorndorf (Germany)
- *Foundations of Sport Management*, Routledge, Francis and Taylor Group. Four books to be published in 2011 and 2012.

3.4. Conference/Workshop Proceedings

- African Sport Management Association (ASMA) – 1st (inaugural) conference in Kampala, Uganda between 2nd and 4th Dec. 2011
- Asian Association for Sport Management (AASM) – 2011 Ulan Bator: The 7th Asian Association for Sport Management Conference
- European Association of Sport Management (EASM) – Annual conferences in early September from 1993
- North American Society for Sport Management (NASSM) – Annual conferences first week of June
- Sport Management Association of Australia and New Zealand (SMAANZ) – Annual conferences in November.

3.5. Data Banks

- Event and Venue Management Institute (EVMI) <http://www.evmi.org>
- National Sporting Goods Association (NSGA/USA) <http://www.nsga.org>
- The International Association for Sports and Leisure Facilities (IAKS) <http://www.iaks.info/en>
- World Federation for Sporting Goods Industry (WFSGI) <http://www.wfsgi.org>
- SIRC (The Sport Industry Research Centre) is one of three sport-related research centres in the Faculty of Health and Wellbeing along with the Centre for Sport and Exercise Science (CSES) and the Centre for Sports Engineering Research (CSER). See Sheffield Hallam University. <http://www.shu.ac.uk/research/sirc/>

3.6. Internet Sources

- Arbeitskreis Sportökonomie e.V. – <http://www.arbeitskreis-sportoeconomie.de>
- European Commission Sport – <http://www.ec.europa.eu/sport>
- European Sport Economics Association (ESEA) – <http://www.sporteconomics.eu>
- European Sport Education Information Platform – <http://www.sophelia.eu>
- International Association of Sports Economists – <http://www.iasecon.net>
- Sport Business Research Network – <http://www.sbrnet.com>
- SIRC Sport Research Institute – <http://www.sirc.ca>

4. Appendix Material

4.1. Terminology

‘Sport management’ is quickly becoming the dominant term for the field, alongside the term ‘sport economics’. Sports economists ask for and analyse macro- and micro-economic matters related to sports. Sport management is a broad field that includes everything from planning to evaluation of sport-related activities. A strong relationship between economic perspectives and management in sport is needed. The leaders involved as officers, managers or researchers from both disciplines need to cooperate today and in the future.

4.2. Position Statements

Sport management must discuss also the dark side of sport, especially doping and corruption. The more important and rewarding it is to win, the more dangerous these phenomenon become. The discussion of sustainability, ethics and responsibility is also important in the education of sport managers.

Free Statement

The field of sport has become more and more diversified, and, therefore, it is good that conferences try to bring the different groups together so they can exchange ideas. For example, the EASM conferences lately have a more business perspective, as well as a practical aspect. Cooperation and competitions are a vital characteristic of sport management. The sport economists have their own organisation.

Sport management is bridging the gap between theory and practice, between local and global perspectives. More and more sports are open for exchange of ideas, goods and persons. Sport is a very important local activity and a huge global business requiring specialists all over the world. Even some non-profit sport organisations (NPO) have revenues and turnovers like global enterprises. Mergers and acquisitions are now one of the new facets of the world of sports (see the cases of Puma, or World Triathlon Corporation and many others).

Cosma: NASSM has a Commission on Sport Management Accreditation, whose purpose is to promote and recognise excellence in sport management education in colleges and universities at the undergraduate and the postgraduate levels – <http://cosmaweb.org/>. Europe does not currently have any common accreditation system.

SPORT GOVERNANCE

Laurence Chalip, Mary A. Hums and Anastasios Kaburakis

1. General Information

The study of sport governance has emerged through hybridization of several disciplines, each of which boasts its own community of discourse. These include sport law, sport policy, sport sociology, sport economics and comparative studies of sport. Although each discipline contributes its particular insights, the growth of sport governance knowledge has been hampered by the challenges of obtaining appropriate information, often from governments and organisations that dislike scrutiny, and by the difficulties that arise when scholars from disparate fields endeavour to communicate across their respective paradigms.

1.1. Historical Development

Formal systems of sport governance can be traced to the earliest eras of recorded history, and seem to have emerged first as religious functions. The ancient Olympic Games, which were organised to honour the gods, are the best known and the most studied. Archaeological evidence suggests that formal sport competitions were also organised as religious functions by some pre-Columbian civilizations in the Americas. As the Olympic Games declined during the Roman era other competitions, including chariot racing and gladiatorial combat emerged as popular but secular entertainments governed by systems of commerce, rather than the clergy. Sport remained secular during the Middle Ages, but governments became increasingly involved as sport was expected to serve as preparation for combat, rather than mere diversion. Royal families consequently saw sport as their jurisdiction and some monarchs went so far as to outlaw non-combat games. Secularization was fortified during the Protestant Reformation, as some Protestant sects discouraged sport participation. Nevertheless, competitions between clubs and villages required agreement on rules. Groups of aficionados came together to agree upon rules and ultimately to record and govern them. European games, rules and their systems for sport governance were spread to other continents by colonial administrations. As sport was also encouraged in some school systems, particularly in Britain and its colonies, systems for governing sport in schools became increasingly formal during the 19th century.

By the late 19th century, a small group of European aristocrats formed what became the International Olympic Committee (IOC) to administer a quadrennial international sport festival. Since international competitions required national systems of governance to field teams, and international systems of governance to coordinate the rules of play and eligibility, additional governing bodies began to form, including National Sport Federations (sometimes called by other names, such as National Governing Bodies or National Sport Organisations), International Sport Federations (IFs) and National Olympic Committees (NOCs). To enable and enhance communication among these organisations, multi-sport

associations were subsequently formed, including the Association of National Olympic Committees (ANOC), the General Association of International Sports Federations (AGFIS) and the International University Sports Federation (FISU). Additionally, the International Paralympic Committee (IPC) emerged as the international governing body for elite sport for athletes with disabilities.

The increasingly salient presence of national and international sport governance organisations piqued government interest, particularly during the latter half of the 20th century, with the result that many national, state and city governments passed laws to regulate (and sometimes to fund) sport in their jurisdictions. Some national governments established ministerial-level portfolios to oversee national sport development. The United Nations, through UNESCO, grew its sports initiatives during the 1970s, and today maintain Sport Development for Peace under the United Nations Fund for International Partnerships. Because sport has an environmental impact, the United Nations (in conjunction with the IOC) also has incorporated sport into its Environment Programme. Although sport organisations have typically welcomed government funding, they have been less willing to embrace government authority. Consequently, the Court of Arbitration for Sport (CAS) and a number of associated national-level, sport-specific dispute resolution systems have been established since the 1980s as an alternative to public courts. At the start of the new century, the emergence of sport-run international systems to police sport has been heralded by the creation of the World Anti-Doping Agency (WADA) and a growing number of its national-level counterparts.

Today, sport governance is characterised by a complex array of loosely networked national and international sport governing bodies and emerging systems for sport-specific policing and arbitration.

1.2. Function

The study of sport governance endeavours to map and understand the growing array of organisations and networks, as well as their internal systems of management and policymaking. There is not yet any commonly agreed set of research foci (or, for that matter, an agreed definition of sport governance). Researchers have been guided by their own intuitions and by the paradigms of their home disciplines.

1.3. Body of Knowledge

To date, there has been increasing work on legal issues, government policymaking, the challenges of developing sport and the economic rationale for sport policies. The mix of organisations and the complexity of networks have required a substantial amount of descriptive study simply to map the territory, but that work remains hampered by systems of academic prestige which award it scant status and few publication opportunities. The challenge has, therefore, been to theorize the work that is undertaken. To date, there has been little effort to develop sport specific theories of governance, so theorization remains derivative from the home discipline of its researchers and through governance principles developed in wider civil society. Although the majority of studies focus on individual national cases or particular international organisations, an increasing number of comparative studies have trickled forth.

Legal research is arguably the most adequately developed, insomuch as its volume of scholarship is greatest, and the requisite data are generally public. Work on specific government policies and policymaking has also grown in recent decades, although slowly. However, work on sport systems and networks remains problematic as the official public positions and descriptions of public and private sport organisations are often at odds with their actual practices of governance and sport organisations (particularly the more powerful ones) are careful to promote their official face while concealing their inner workings. Indeed, one of the most significant contributions to the field has been work that identifies gaps between the official face and the actual practice of sport governance. Multi-disciplinary work has also contributed new synthetic insight, although multi-disciplinary studies remain rare.

1.4. Methodology

There is no established methodology or collection of methodologists for the study of sport governance. Researchers typically adopt methods that are familiar to their home disciplines. Studies have utilised surveys, interviews, participant and non-participant observation and reviews of documents (particularly policy discourse and legal cases). Given that there can be a gap between a sport organisation's official claims and its actual practices, there are grounds for being wary about the accuracy of the survey and interview studies that are not bolstered by observation and/or review of documents. The best studies incorporate multiple methods.

1.5. Relationship to Practice

Although the study of sport governance holds significant promise for eventual contribution to the practice of sport governance, the field is not yet mature enough to boast a record of contributions to practice. The study of sport law, which is the most mature component of the field, has generated a substantial number of published cases and analyses that can and do have an impact on sport jurisprudence. The study of sport policy draws on the toolkits of policy analysis, which have demonstrated substantial utility for governance in other realms, but have not yet rendered an impact in sport (with the arguable exception of some work on sport economics, particularly work having to do with the public subsidy of sport). In the early 1990s, there was an acrimonious debate among sociologists of sport regarding the appropriateness of seeking to apply sociology to sport policymaking. Although some sociologists retain an interest in sport governance, those who inveigh against practical relevance have had the upper hand. Similarly, sport historians have tended to remain wedded to narrative history, despite the demonstrated values of applied history to policymaking.

1.6. Future Perspectives

Sport governance is becoming ever more complex. Government and private organisations are increasingly intertwined and the international intricacies of sport governance are intensified by globalization. New organisations continue to emerge as new sports (e.g., paragliding, disc-golf, floorball) develop governance systems, as new sport events are created and as sport-specific policing and arbitration systems spread. The need to understand the dynamics of sport governance is consequently growing apace. To flourish, the field, as an area of study, requires a greater degree of cross-dialogue among contributing academic disciplines, and a more substantial commitment to multi-disciplinary and multi-method research.

2. Organisational Network

2.1. Major International Organisations and Networks

- Association of National Olympic Committees (ANOC)
- Association of Summer Olympic International Federations (ASOIF)
- Association of Winter Olympic Sports (AWOS)
- General Association of International Sports Federations (GAISF)
- International Sport Management Alliance (ISMA)
- International Olympic Committee (IOC)
- International Paralympic Committee (IPC)
- International Sociology of Sport Association (ISSA)
- International Sport Lawyers Association (ISLA)
- International University Sports Federation (IUSF)
- Trim and Fitness International Sport for All (TAFISA).

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- African Sport Management Association (ASMA)
- Asian Association for Sport Management (AASM)
- Association Latinoamericana de Gerencia Deportiva (ALGeDe)
- Association for the Study of Sport and the European Union (ASSEU)
- European Association for Sport Management (EASM)
- North American Association for Sport Economics (NAASE)
- North American Society for Sport Management (NASSM)
- North American Society for the Sociology of Sport (NASSS)
- Sport Management Association of Australia and New Zealand (SMAANZ)

- Sport and Recreation Law Association (SRLA)
- Union of European Leagues of Basketball (UELB)
- National Collegiate Athletic Association (USA)
- National Federations (each country; see relevant IF site for contracts)
- National Olympic Committees (each country; see the IOC website for a list)
- ASSER International Sport Law Centre, The Hague, The Netherlands
- Centre d'Estudis Olímpics, Barcelona, Spain
- Centre for Sport and Law Inc., Canada
- Centre International D'Etude Du Sport, Neuchatel, Switzerland
- Forschungsstelle für Sportrecht, Institut für Recht und Technik (IRUT), Germany
- LA84 Foundation, Los Angeles, USA
- National Sport Law Institute, Marquette University, USA.

2.3. Specialised International Degree Programmes

- Anglia Ruskin University; LLM International Sports Law, UK
- Master of Laws (LL.M.) in Sports Law for those with non-U.S. law degrees, Marquette University, USA
- MSA specializing in managing sport governing organisations: International Academy of Sports Science and Technology, Switzerland.

3. Information Sources

3.1. Journals

- *Australian and New Zealand Sports Law Journal* (Australia/New Zealand)
- *Causa Sport* (Switzerland)
- *DePaul Journal of Sports Law and Contemporary Issues* (USA)
- *Derecho Deportivo* (Spain)
- *Desporto and Direito* (Portugal)
- *European Sport Management Quarterly* (EU)
- *Entertainment and Sports Law Journal* (UK)
- *Entertainment and Sports Lawyer* (USA)
- *International Journal of Sport Policy and Politics*
- *International Review for the Sociology of Sport*
- *International Sports Law Review*
- *IUSPORT* (Spain)

- *Journal of Legal Aspects of Sport* (North America)
- *Journal of Sport Management* (North America)
- *Les Cahiers de Droit du Sport* (France)
- *Marquette Sports Law Review* (USA)
- *Nieuwsbrief Sport en Recht* (Belgium)
- *Revista di Diritto ed Economia dello Sport* (Italy)
- *Seton Hall Journal of Sport Law Society* (Seton Hall University School of Law) (USA)
- *Sociology of Sport Journal* (North America)
- *Sport Management Review* (Australia/New Zealand)
- *The Journal of the Business Law Society* (USA)
- *The Sports Lawyer Journal* (USA)
- *Villanova Sports and Entertainment Law Journal* (USA)
- *World Sports Law Report* (UK)
- *Zeitschrift für Sport und Recht* (Germany).

3.2. Reference Books, Encyclopaedias, etc.

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- Levermore, R., and Budd, A. (2004). *Sport and International Relations: An Emerging Relationship*. London: Routledge.
- Nicholson, M., Hoye, R., and Houlihan, B. (2011). *Participation in Sport: International Policy Perspectives*. London: Routledge.
- Riordan, J., and Kruger, A. (1999). *International Politics of Sport in the 20th Century*. London: E and FN Spon.

Thoma, J. E., and Chalip, L. (1996). *Sport Governance in the Global Community*. Morgantown, WV: Fitness Information Technology.

Zintz, T. (2005). *Manager le Changement dans les Federations Sportives en Europe*. Brussels: de Broeck.

3.3. Book Series

Not applicable.

3.4. Congress/Workshop Proceedings

Play the Game 2007 – Creating Collations for Good Governance in Sport

www.playthegame.org/Home/Confernces/Play_the_Game_2007/presentations.aspx

Play the Game 2005 – Governance in Sport – The Good, the Bad and the Ugly

www.playthegame.org/Home/Conferences/Play_the_Game_2005/Confernce_presentations.aspx

3.5. Data Banks

Not applicable.

3.6. Internet Sources

Association of National Olympic Committees

www.acnolympic.org

Court of Arbitration for Sport

www.tas-cas.org

Court of Justice of the European Communities

<http://curia.europa.eu/>

EurActiv

www.euractiv.com/en/sports

General Association of International Sports Federations

www.agfisonline.com

International Olympic Committee

www.olympic.org

International Paralympic Committee

www.paralympic.org

International University Sports Federation

www.fisu.net/site/medias/accueil.html

Sport and EU

www.sportandeu.com

Sport Development and Peace (UN)

www.un.org/themes/sport/

Sport Links Central

www.sportlinkscentral.com

Sport and European Union

http://ec.europa.eu/sport/index_en.html

Sport for All

www.tafisa.de/

WADA

www.wada-ama.org

4. Appendix Materials

4.1. Terminology

There is not yet an agreed set of definitions in the field. Hums and MacLean (2009) define sport governance 'the exercise of power and authority in sport organisations, including policy making, to determine organisational mission, membership, eligibility and regulatory power, with the organisation's appropriate local, national, or international scope.'

4.2. Position Statements

Not applicable.

Part IV.
Multi-disciplinary Thematic Areas

Multi-disciplinary Thematic Areas of Sports are specific areas of interest common to all sport and exercise sciences universally. Their body of knowledge is pragmatic supporting practical applications rather than pure scientific knowledge. However, many of them have strong scientific traditions with regular scientific conferences and networks between international scholars. Some even have university curricula and academic education programmes. Some areas still need recognition from Higher Education Institutions and strong stimulus for scientific approaches in the field. Part IV lists nine multi-disciplinary thematic areas of sports.

COMPARATIVE PHYSICAL EDUCATION AND SPORT

Ken Hardman and Martin Holzweg

1. General Information

1.1. Historical Development

Comparative studies in Society and Education have their origins in explorers' and travellers' accounts of customs and practices, usually stemming from journeys based on simple curiosity of the strange and exotic; and later, commercial enterprise. They preceded the 19th century quest for knowledge and emulation of foreign schools' practices through purposeful observation. Such observation was embedded in the pragmatism of potential 'cultural borrowing', albeit concerned more with 'What?' and less with 'Why?' and 'How?' From these seeds grew a comparative methodology movement calling for a more comprehensive analytical and explanatory approach. This was evolved largely by Sir Michael Sadler. It was grounded in historical enquiry and the establishment of general principles. Half a century on, by the mid-1960s, comparative studies in education had progressed from individual intuitive and descriptive 'raw data' and historical techniques, to more sophisticated systematic methods of analysis, drawing largely from social science methods of investigation and inter-disciplinary 'team' approaches.

Within physical education and sport, it was not until 1970 that American sports historian, John E. Nixon, reported an increasing interest in international perspectives, shown by the plethora of descriptive articles contributing to professional journals by American physical educators. Most of these articles represented information derived from observational educational or 'touristic' visits, to be shared with colleagues. They did not qualify, in Nixon's (1970) view, as comparative research reports and reflected the broader situation of comparative studies in physical education and sport trailing behind reported research in the 'parent' area, 'comparative education'. Indeed, texts concerned with comparative and international issues and dimensions were at that time a rarity. Morton (1953) and Louis and Louis (1964), had produced descriptions of sport in the Soviet Union and Nixon had co-edited (1968) a text with C.L. Vendien containing information on health, physical education and recreation in several countries around the world.

After 1970, comparative and international studies in physical education and sport were subject to a relatively significant development of interest and scholarly activity, the latter especially marked by two seminal texts: Bennett, Howell and Simri (1975) and Riordan (1978). The formation of the International Society for Comparative Physical Education and Sport (ISCPES) in 1978/9 marked the coming of age of a domain of widely acknowledged pan-national study and interest, shown by publications in established and respected international, single, multi- and cross-discipline journals. A selected list of articles was included in the *International Journal of Physical Education*, volume XXXVIII, Issue 3, 3rd Quarter, 2001 (Hardman, 2001, p. 99).

A positive development in the comparative field has been the academic, professional, but most significantly, political interest in publication of data from a range of international, national and regional surveys and longitudinal literature reviews. Examples are found in: the 1998-1999 *Worldwide Survey on the State and Status of Physical Education in Schools* (Hardman and Marshall, 2000), supported by ICSSPE and funded by the International Olympic Committee (IOC); the Council of Europe Survey of Physical Education in Member States (Hardman, 2002); the North Western Counties PE Association follow-up worldwide survey on the situation of school physical education endorsed by ICSSPE and the United Nations Educational, Scientific and Cultural Organisation (UNESCO), undertaken as part of the United Nations 2005 Year of Sport and Physical Education (Hardman and Marshall, 2006); the European Parliament Project (2006-2007) on the situation and future sustainability of School Physical Education in European Union countries (Hardman, 2007), findings from which informed the European Parliament's *Resolution on the Role of Sport in Education* (European Commission, 2007); and the extended Second Worldwide Survey of Physical Education in Schools (Hardman and Marshall, 2009). As illustrated by the European Parliament's 2007 *Resolution*, such international and comparative-focused studies have helped to place physical education in schools on the world political agenda with increasing signs of intergovernmental agency (e.g. UNESCO, World Health Organisation) and non-governmental agency (IOC, European Physical Education Association (EUPEA), ICSSPE, Fédération Internationale d'Education Physique (FIEP)) involvement.

The 2004 European Year of Education through Sport, and United Nations 2005 Year of Sport and Physical Education demonstrate the significance of physical education and sport to international communities. The push for harmonisation in physical education in Europe is another indicator of international interest and its process has been assisted by European Union programmes such as Erasmus and Socrates. The trend for harmonisation was clearly articulated in the 1999 Bologna Agreement to create a common model for Higher Education in Europe, with institutions subsequently encouraged to develop a framework of comparable and compatible qualifications for their programmes. Hence, a four year (2003-2007) Erasmus funded Thematic Network Project, *Aligning European Higher Education Structure in Sport Science* (AEHESIS), emerged. Drawing on the pilot project *Tuning Educational Structures in Europe* (the so-called *Tuning Project*) methodologies, the AEHESIS Project established innovative guidelines specifically for the broadly defined sport sector (Health and Fitness, Physical Education, Sport Coaching and Sport Management) for the development of curricula and quality assurance systems for study programmes.

The trend to gather international data to inform, or be used in policy formulation is set to continue. EUPEA has administered (2011) a European-wide Questionnaire on European Physical Education Curriculum, which seeks information on both existing Physical Education curricula and the minimum Physical Education curriculum that each national organisation desires. The information gathered will provide a database on the actual and desired Physical Education European Curriculum. A collaborative UNESCO-NWCPEA Project on the Situation of PE in Schools, Development of Quality PE/PETE Indicators and Basic Needs Model is under way (2012) : its primary purpose is to provide an overview of the situation of physical education in schools across the world, to inform the formulation of Quality

PE Indicators (QPEIs), Quality PE Teacher Education Indicators (QPETIs) and a 'Basic Needs' Model. A Quality Physical Education and Sport (QPES) Questionnaire Survey, led by Dr Walter Ho of the University of Macau, is also being completed (2012); and members of ICSSPE's International Committee of Sport Pedagogy have generated new global insights by collecting voices of physical education across the world. For comparative genre scholars, this renewed interest in international issues is generating rich data, which can be compared and utilised for ameliorative development, a fundamental purpose of the comparative study domain.

1.2. Function

Comparative physical education and sport as an area of study draws from a number of disciplines, hence is seen to be multi- and inter-disciplinary. As an area of scholarly activity, the genre seeks through the establishment of reliable data to: (a) provide information on the 'worlds' of others; (b) foster knowledge about one's own 'world' through confrontation with alternatives; and (c) amelioration through learning about and from others. Of crucial importance to these processes is discovering and revealing shaping influences, which through cross-analysis, provide causal connections, and hence explanations. Deeper insight into, and understanding of, the processes and products of delivery are thus acquired.

1.3. Body of Knowledge

A persistent problem is to obtain a common understanding of what constitutes comparative studies. Arguably, comparative physical education and sport might be more closely identified with method rather than with a distinct body of knowledge. The critical term is *comparative*. The International Society for Comparative Physical Education and Sport (ISCPES) defines comparative study as 'investigation into and comparison of two or more units (countries, cultures, ideologies, regions, states, systems, institutions, populations)', mostly occurring in different geographical settings. Phenomena to be compared include: school systems (or elements) of physical education and sport models in macro or micro context. Usually the phenomena associated with such units are universal, but cross culturally and cross-nationally, they may differ in focus and substance. Comparativists study how and why they differ. Comparative analyses involve those directing and initiating research, which explore the suitability of new elements from other cultures for inclusion in their programmes. Beside the comparative dimension, the domain encompasses issues related to studies of countries (so-called mono-national, first order comparative studies), education for internationalism and development assistance.

1.4. Methodology

The field of comparative physical education and sport has travelled a similar route to comparative education, from which it has adopted various methodological approaches. After the early historico-

cultural explanatory traditions and social scientific approaches, a number of classification frameworks or schema were developed to examine physical education and sports systems. They range from simple, first hand reports (Vendien and Nixon, 1968; Johnson, 1981), to detailed delineation of shaping or influential determinant factors (Sturzebecker, 1967; Bennett, 1970); and elaborate conceptual frameworks based on established schema in a range of related fields and disciplines (Morrison, 1979). All, however, emphasise that physical education and sport should be seen as part of the societal setting in which they exist. This overview of the progress of methodologies illustrates that comparative study has moved from early descriptive narratives of 'what', through the formative historico-explanatory tradition, to comprehensive and systematic methods of data collection in the tradition of the social sciences, to reveal 'why' and 'how' of developed and developing systems.

Currently, comparative physical education and sport studies' methodology embraces a range of analytical tools to be applied to comparative data. Comparative study no longer attempts to define a single methodology and no single method is developed as canon. Recently, comparative education scholars have adopted a range of methodological approaches to deal with complex issues. These eclectic and pluralist approaches provide means of dealing with a broad range of issues. Empirical quantitative approaches establishing correlations have been enriched by the qualitative paradigm seeking to achieve understanding and interpretation of processes and reveal causality. For international comparisons 'differing traditions and terminology ... always present a minefield of difficulty' (Halsey, 1992, p.33), as illustrated by, for example, school age start and finish, number of years in schooling, type of school (Basic, primary/elementary, secondary, middle, senior etc.)

The nuances and subtleties of language, especially in areas like 'Action Research' when context and the interpretation are everything, are frequently a challenge in international research. Linguistic equivalence may be obtained through the 'back translation' mechanism but this can be problematic because it assumes that people are immersed in two different cultural milieux. Nevertheless, it is essential to know the extent to which literally equivalent words and phrases convey equivalent meanings in different languages or cultures (Broadfoot and Osborn, 1992) and to ensure that the research problem is salient to all cultures involved, that primary emphasis is on conceptual equivalence – comparability of ideas – rather than the words *per se* and that there is extensive pre-testing of the research instruments in the local culture.

1.5. Relationship to Practice

Whilst it is clear that physical education and sporting activity do have an ubiquitous global presence, they are at the same time subject to culturally specific 'local' (national) interpretations, policies and practices. Inevitably, similarities and differences are encountered at these levels. This demonstrates both diversity and complexity in process and product as well as in the influential factors, which have acted collectively and inter-dependently to 'shape' a delivery system. Ideological variants, for example, reinforce the argument of similarities and differences and the diversities evident at local, regional and

national levels. Such diversity supports the thesis that 'localisation' within 'globalisation' can and does exist. Even in regions where there have been common ideologies, such as the former 'socialist bloc' of central and eastern European states with their centralised systems, research points to substantial variations in aspects of the delivery services. Typical were the variations in the development of young, talented athletes to levels of excellence. The 'localisation/globalisation' debate is also manifest in the national settings of European Union countries, where efforts to bring about congruence and harmony in programmes must recognise the existence of deep-seated transnational diversities. Embedded traditions in physical education and sport in European countries are inextricably bound up with historical antecedents and are inevitably culture bound. These are features that are fundamental to understanding, when curriculum planners strive for uniformity and standardisation.

A potential pitfall within the domain of comparative and international studies lies with 'truth' or 'fact', often witnessed in discrepancies between principles and practices; or, for example, in government policy rhetoric and its actual implementation. Illustrations of gaps between policy promises and actual practice are seen in the recent international surveys of the situation of physical education in schools (refer Hardman and Marshall 2000; Hardman 2002; Hardman and Marshall, 2005; Hardman, 2007; and Hardman and Marshall, 2009). Despite this, comparative study can facilitate awareness of possibilities for amelioration of existing structures and mechanisms through processes of adoption or adaptation to suit local (national), socio-cultural, economic and environmental circumstances. The international dimension within comparative research can, and does, inform policy at inter- and national governmental agency levels, as testified by UNESCO, World Health Organisation, Council of Europe and European Parliament and a plethora of national governments' responses to findings from international comparative surveys.

1.6. Future Perspectives

For future developments in the comparative physical education and sport domain, mixed messages are evident. Generally, there is a shift away from the mono- and multi-national 'area' approaches of the latter years of the 20th century, to thematic or topic approaches. This shift is seen in two developments: (i) the disappearance of Comparative Physical Education and Sport modules or course units from university level programmes and replacement by inter-disciplinary issues-based units, which focus on international themes such as the situation of physical education in schools, gender, disability, or topics such as politics or youth sport, with a comparative dimension or from a comparative perspective; and (ii) in titles and contents of published texts including books, journal articles and reports. However, in some regions of the world, mainly those that are economically emerging or developing or have recently politically and ideological re-aligned, there is interest in features and systems in national entity contexts. Central to future initiatives will be the continuing globalisation versus localisation debate, the role of internet/ethernet communication, and increasingly sophisticated methodological procedures to enable validity and reliability of data when crossing cultural and other divides.

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- Vendien, C. L., and Nixon, J. E. (1968). *The World Today in Health, Physical Education and Recreation*. Englewood Cliffs, NJ: Prentice-Hall Inc.

2. Organisational Network

2.1. Major International Organisations and Networks

Over three decades, ISCPES has become acknowledged as the leading body in comparative physical education and sport studies. The society is a research and educational organisation, which has the expressed purpose of supporting, encouraging and providing assistance to those seeking to initiate and strengthen research and teaching programmes in comparative physical education and sport throughout the world.

The ISCPES Executive Board members serve for a period of four years on a rolling basis to preserve an element of continuity. The Board currently comprises: Walter K. Y. Ho (President, China), Rosa Lopez D'Amico (Vice President, Venezuela), Lateef O. Amusa (South Africa), Martin Holzweg (Germany), Lynn Housner (United States of America), Liu Li (China) and Abel L. Toriola (South Africa).

In 1986, ISCPES gained membership of ICSSPE and, with AIESEP, FIEP, IAPESGW, IFAPA and ICCE, is a constituent member of the International Committee of Sport Pedagogy (ICSP). ISCPES also works with UNESCO, the WHO, the IOC, IPC, and ICHPER.SD.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Regional Level

- AHPHERD (International Relations Council)
- EUPEA
- FIEP Europe
- Latin American Association of Socio-cultural Studies in Sport.

Specialised Centres

Beyond Higher Education Institutions' programmes, such as the Estudios en Educación Física, Salud, Deporte, Recreación y Danza (EDUFISADRED), UPEL – Pedagógico de Maracay, Maracay, Venezuela, there are no known, dedicated Comparative PE and Sport specialised centres.

2.3. Specialised International Degree Programmes

A number of university level institutions offer programmes with an international orientation or dimension. At the regional, continental level, international Master's programmes have been developed in Physical Education and Adapted Physical Activity. In September 1999, an innovative European Masters in Physical Education degree programme was introduced.

There is a European one-year postgraduate programme coordinated by the Catholic University, Leuven, Belgium, providing research and teaching methodology in Adapted Physical Activity (APA). This European Masters in Adapted Physical Activity exists alongside a recently introduced Erasmus Mundus Master in Adapted Physical Activity.

3. Information Sources

3.1. Journals

The International Society for Physical Education and Sport has published an international journal since 1999, entitled *International Sports Studies* (ISS, formerly *Journal of Comparative Physical Education and Sport*). Examples of other journals, which carry comparative, international and cross cultural articles include:

- *International Journal of Physical Education* (IJPE)
- *FIEP Bulletin* (FIEP)
- *Journal of the International Council for Health, Physical Education, Recreation, Sport and Dance* (ICHPER.SD) and its autonomous regional derivatives (*African, American, Asian and Australian Council for Health, Physical Education and Recreation*).

3.2. Reference Books, Encyclopaedias, etc.

- Bartlett, R., Gratton, C., and Rolf, C. (2003). *Encyclopaedia of International Sports Studies*. London: Taylor and Francis.
- Hardman, K., and Green, K. (2011) *Contemporary Issues in Physical Education: an International Perspective*. Aachen: Meyer and Meyer.
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- Ho, W., and Ren, H. (2010). *Global Perception: Globalization, Sport Management and Traditions*. Aachen: Meyer and Meyer.
- Ho, W., and Ren, H. (2010). *Global Perception: Sport Education, Teaching of Physical Education and Curriculum Studies*. Aachen: Meyer and Meyer.
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3.3. Book Series

The ISCPES Book Series (terminated in 2004) was published by Routledge (Spon, UK). ISCPES Monographs include:

- Hardman, K. (1996). *Foundations in Comparative Physical Education and Sport*. Manchester, Centre for Physical Education and Leisure Studies, University of Manchester
- Maeda, M., Ichimura, S., and Hardman, K. (Eds.). (1996). *Physical Education and Sport in Japan*. Manchester: University of Manchester
- Hardman, K. (Ed.). (1996). *Sport for All: Issues and Perspectives in International Context*. ISCPES Monograph. Manchester: University of Manchester.

3.4. Congress/Workshop Proceedings

Between 1978 and 2000, ISCPES published the proceedings of its 11 Biennial Conferences (Wingate, Israel, 1978; Halifax, Canada, 1980; Minneapolis, USA, 1982; Malente, Germany, 1984; Vancouver, Canada, 1986; Hong Kong, 1988; Marlow, England, 1990; Houston, Texas, USA, 1992; Prague, Czech Republic, 1994; Tokyo, Japan, 1996; Leuven, Belgium, 1998).

Since the Leuven Conference, papers have featured variously as a double 'special' issue of *International Sports Studies* (12th Biennial Conference, Maroochydore, Queensland, 2000) and in CD Rom format (13th Biennial Conference, Windsor, Canada, 2001 and 14th Biennial Conference, Melbourne, 2006).

At the regional level, proceedings of the ISCPES Regional Conferences were published: Maracay, Venezuela, 2005; Varadero, Cuba, 2007.

3.5. Data Banks

Wilcox, R. (Ed.). (1986). *Comparative physical education and sport directory*. New York: Adelphi University.

3.6. Internet Sources (web sites, list serves, etc.)

- AEHESIS Project: www.aehesis.com
- EUPEA: www.eupea.com
- FIEP: www.fiepeurope.eu
- ISCPES: www.iscpes.com

4. Appendix Materials

4.1. Terminology

Studying phenomena from different geo-political and socio-cultural locations brings challenges in interpretation of linguistic terms and conceptual variations over time and space. These are areas for concern, for language and terminology, together with concepts, present particular problems in studies with a comparative or international focus. In translation, some words lose their original meaning because they are culture-bound. Terms may differ from country to country. Europe's diversity of languages and cultures illustrates the point. In France, physical education appears as *l'Éducation Physique et Sport* (*physical education and sport*) in schools; in Germany, the term *Sport/Sportunterricht* (*sport/sport instruction or teaching*) was generally adopted in the 1970s onwards with the *physical educator* termed the *sports teacher*; in the former divided Germany (1949-1990), the generic term for physical education in the two decades after the Second World War was *Leibeserziehung* in the then Federal Republic (West Germany) and *Körpererziehung* in the Democratic Republic (East Germany), the latter influenced by a post-World War II sovietisation process, in which *physical culture* and cultivation of the *socialist personality* had an important role throughout central and eastern Europe; since, the year 2000, several Länder in reunified Germany have introduced a re-conceptualised form of physical education, *Bewegungserziehung* (*movement education*); in Sweden the term in general use is *idrott i hälsa* (*sport and health*); whereas in the United Kingdom, the term *physical education* is used.

These examples illustrate difficulties, not only between countries with different languages, but also between countries which share a common language, yet with distinctively different ideological settings determining cultural norms and values. Thus, terminology and terminological issues are pervasive areas of debate, especially in the context of research validity when collecting and interpreting data across cultural divides. 'Back translation' of research instruments such as questionnaire and interview schedules is an imperative in cross cultural studies. Increasingly sophisticated methodologies drawn from other disciplinary areas are being employed to assist in terminological validation of research data.

4.2. Position Statements

Refer to section 1.3. *Body of Knowledge*.

Free Statement

For the lead comparative physical education and sport domain organisation, the recent resurgence of interest in international issues has coincided with developmental initiatives within and by ISCPES:

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- regional conferences in Maracay, Maturin and Rubio, Venezuela, (October 2005), Varadero, Cuba, (April 2007), Vancouver, Canada (June 2009), and Shanghai, People's Republic of China (June 2011)
 - a new promotional brochure available in six languages
 - establishment of regional and country representatives
 - a graduated annual membership fee system (individual and institutional) based on national economic status
 - creation of a website (www.iscpes.com) and review of its constitution.

SPORT AND DOPING

Lauri Tarasti, Jennifer Sclater and Jim Parry

1. General Information

1.1. Historical Development

Doping is an old phenomenon. Efforts to enhance performance with artificial substances have been known for nearly as long as competitive sport itself. However, doping, as a modern term, appeared first at the end of the 1950s and was defined at the beginning of the 1960s by the International Olympic Committee (IOC). At that time, the doping control or testing technology was only able to detect a few doping substances, mainly stimulants.

Although the Council of Europe adopted its first resolution against doping in 1967 (*Resolution on the Doping of Athletes* 67/12), no real doping control existed before a reliable test for the detection of anabolic steroids was developed in the early 1970s. Anabolic steroids were added to the list of prohibited substances in 1976, testosterone in the early 1980s, beta-blockers and blood doping in 1985, diuretics in 1987 and EPO in 1990.

For many years, testing only occurred during competition. Out-of-competition testing began in the 1980s and the first International Association of Athletics Federations (IAAF) 'flying squad' of doping control officers (DOCs) started its worldwide testing in 1990. Today, anti-doping organisations conduct approximately 250,000 tests annually, of which the majority are conducted out-of-competition.

Detection of EPO (erythropoietin) and human growth hormone (hGH) improved significantly in the 2000s, while gene manipulation continues to be difficult to detect. There appears to be a constant race between those seeking to enhance performance and those seeking to detect the use of prohibited substances.

Doping cases have attracted a lot of publicity and media attention. Sport organisations have taken a strong position against doping and governments have paid much attention to the battle. The need to fight doping in sport and ensure that athletes' rights are protected against unfair or heavy sanctions has resulted in many structural changes in sport. The first internal tribunal in sport was established in 1982 (the IAAF Arbitration Panel) and, at the initiative of the IOC, the Court of Arbitration for Sport (CAS) was created in 1983, mainly in order to deal with doping cases. CAS is the tribunal for international disputes related to doping.

Following several doping scandals, particularly those that shook the cycling world during the 1998 Tour de France cycling race, the IOC convened a large anti-doping congress in 1999 in Lausanne (Switzerland), where the World Anti-Doping Agency (WADA) was established. This unique international

organisation is based on a unique cooperation between sport organisations and governments. WADA is financed and led equally by sport organisations and governments.

Arguably WADA's greatest achievement to date has been the drafting and implementation of the *World Anti-Doping Code* (Code), with the first version coming into force in 2004 and a revised version in 2009.

Given that many governments cannot be legally bound by a non-governmental document such as the Code, the UNESCO International Convention against Doping in Sport (Convention) was drafted and adopted by governments in order to align domestic policies with the Code. This first universal treaty against doping in sport entered into force in February 2007. To date, 159 states have ratified the Convention.

1.2. Function

The principle of the World Anti-Doping Code is to harmonize anti-doping rules and measures in the fight against doping in all sports and in all countries. Therefore, WADA and the Code are in a central position in most matters, both scientific and practical, concerning doping.

WADA's activities highlight the fact that the fight against doping in sport touches upon many areas of sport science. Scientific and medical research guide which substances and methods will be included on the List of Prohibited Substances and Methods (List). The List is published after consultation with stakeholders. Doping control samples are analysed at a WADA accredited laboratory, following the principles outlined in the International Standard for Laboratories and the accompanying technical documents.

Recognising that athletes may require the use of a prohibited substance or method for a legitimate medical condition, the Therapeutic Use Exemption (TUE) Programme was created. All applications are reviewed by International Federation (IF) or National Anti-Doping Organisation (NADO) TUE panels, which follow the guidelines outlined in the International Standard for TUEs.

Anti-doping rules are juridical norms and belong to the area of sport law. In fact, these rules have been important ever since sports law developed into its own area of a sport science.

Coaches have an important role to play, not only in ensuring that their athletes are not tempted by doping, but in educating them about their rights and responsibilities.

Ethics of doping is examined in the philosophy of sport. It is a question of education and sport pedagogy: which values of sport are taught in physical education?

Doping as a phenomenon of modern sport is studied in the sociology of sport, history and the political science of sport.

Doping also has connections with criminality. Many doping substances are also illegal drugs. The illegal trade of doping substances is wide. Furthermore, given that not all athletes who are doping are caught through doping control, anti-doping organisations and governments have intensified their investigative work in collaboration with law enforcement agencies.

1.3. Body of Knowledge

The revised or 2009 World Anti-Doping Code was accepted in Madrid in November 2007 and came into effect on January 1, 2009. A new Code review process was launched in 2012. This review will be based on the consultative model of the first Code review process conducted in 2006–2007 and will culminate at the 2013 World Conference.

Mandatory international standards have been accepted for different technical and operational areas, including:

- International Standard for Testing
- International Standard for Laboratories
- List of Prohibited Substances and Methods
- International Standard for Therapeutic Use Exemptions
- International Standard for the Protection of Privacy and Personal Information.

In addition to the International Standards, WADA publishes non-mandatory models of best practice and guidelines as recommendations for stakeholders.

The juridical side of anti-doping is finally solved by CAS acting as the court of last instance. The decisions under rules implemented pursuant to the Code in cases arising from competition in an international event or in cases involving international level athletes may be appealed exclusively to CAS. In cases involving national level athletes, the decisions may first be appealed to an independent and impartial body in accordance with the rules established by the national anti-doping organisation concerned.

As previously mentioned, governments have accepted to follow the principles of the Code through the ratification of the UNESCO Convention. Many governments, especially in Europe, have included doping within their criminal code or in a separate act. The supervision of doping offences by the authorities has consequently expanded.

1.4. Methodology

While the methodology used when studying doping depends on the relevant area of sport science, increasing the knowledge base, from both a hard science and social science perspective, is supported by WADA and many anti-doping organisations.

WADA is committed to increasing the volume of research dedicated to developing new and improved detection methods for prohibited substances and methods, as well as emerging trends, such as gene doping. In addition, WADA is committed to improving evidence-based doping prevention strategies through social science research.

WADA issues calls for proposals for each programme on a yearly basis.

1.5. Relationship to Practice

An effort is made to make clear the practical application of the knowledge gained through research to the day-to-day fight against doping in sport.

All WADA accredited laboratories are expected to carry-out research and development projects and share the findings with other laboratories.

1.6. Future Perspectives

Not applicable.

References

Not applicable.

2. Organisational Network

2.1. Major International Organisations and Networks

WADA

WADA is a Swiss Foundation and the independent international organisation responsible for promoting, coordinating and monitoring the fight against doping in all its forms. Its headquarters are in Montreal, Canada. It has four regional offices in Lausanne, Tokyo, Cape Town and Montevideo.

With an annual budget of US\$28 million, WADA is financed and led equally by sport organisations (through the Olympic Movement) and governments.

In accordance with Article 6.1 of the Code, all doping control samples shall only be analysed at WADA accredited laboratories. The anti-doping organisation responsible for the results management shall determine which laboratory will be selected for analysing samples. A list of accredited laboratories can be found on WADA's Website – <http://www.wada-ama.org/en/Science-Medicine/Anti-Doping-Laboratories/>. Approximately 250,000 samples are analysed a year, of which approximately 2% produce positive findings (i.e. doping detected).

The Court of Arbitration for Sport (CAS)

The IOC ratified the statutes of CAS in 1983. CAS has a very important position as the last juridical appealing instance in doping cases in accordance with the Code. CAS gives the final interpretation of the Code.

The Code of Sports-related Arbitration includes four procedures:

- The ordinary arbitration procedure
- The appeals arbitration procedure (consisting of doping cases)
- The advisory procedure
- The mediation procedure.

CAS has established ad hoc divisions for large events, such as the Olympic Games, with the task of settling, within a 24-hour time-limit, any disputes arising during the events.

The seat of CAS is in Lausanne and CAS has regional offices in Sydney and New York.

CAS has a network of nearly 300 arbitrators, typically with three arbitrators sitting on the Panel for a case. CAS renders approximately 75 decisions a year.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Many countries have their own NADOs, which is at least partially financed by the government. The NADO allows doping control activities to be centralised within the country. A list of NADOs can be found on WADA's website – <http://www.wada-ama.org/en/Anti-Doping-Community/NADOs/List-of-NADOs/>

Regional Anti-Doping Organisations (RADOs) were created to bring together countries with similar sociolinguistic backgrounds and geographic proximity to reduce the amount of resources needed to develop testing and education programmes. There are currently 15 established RADOs bringing together 122 countries. Each RADO trains local experts in the following areas:

- Results management
- Appeals
- Therapeutic use exemptions
- Anti-doping education
- Sample collection.

2.3. Specialised International Degree Programmes

The study of doping may be included in international degree programmes in sports medicine and sports law. Anti-doping education is often attached to international degree programmes of other sectors of sport science.

3. Information Sources

3.1. Journals

WADA's flagship magazine, *Play True*, is published in English and French three times per year. *Play True* is available in print and electronic format. See <http://www.wada-ama.org/en/Resources/Publications/Play-True-Magazine/>

The subject of doping in sport may be dealt with in the various sport science journals, particularly in the areas of sports medicine and sports law.

WADA funded a review of literature 'to highlight the factors which have been determined, to date, as the most successful preventive approaches in these respective domains' (Backhouse, McKenna and Patterson, 2009). The full citation and link to the report is included below:

Backhouse, S., McKenna, J., and Patterson, L. (2009). Prevention through education: A review of current international social science literature. Retrieved from http://www.wada-ama.org/Documents/Education_Awareness/SocialScienceResearch/Funded_Research_Projects/2008/backhouse_Prevention_through_Education_final_2009.pdf

3.2. Reference Books, Encyclopaedias, etc.

For some key books on doping, see:

Blackshaw, I.S., Siekmann, R.C.R., and Soek, J. (2006). *The Court of Arbitration for Sport 1984-2004*. The Hague: T.M.S. Asser Press.

Houlihan, B. (1999). *Dying to Win. Doping in Sport and the Development of Anti-Doping Policy*. Strasbourg: Council of Europe.

Siekmann, R.C.R., and Soek, J. (2007). *The Council of Europe and Sport: Basic documents*. The Hague: T.M.S. Asser Press.

Soek, J. (2006). *The Strict Liability Principle and the Human Rights of Athletes in Doping Cases*. The Hague: T.M.S. Asser Press.

For a wide list of reference books, journals etc. see Janwille Soek's above-mentioned book, *The Strict Liability Principle and the Human Rights of Athletes in Doping Cases* (2006).

3.3. and 3.4. Book Series and Conference/Workshop Proceedings

See Section 3.2. *Reference Books, Encyclopaedias, etc.* above.

3.5. and 3.6. Data Banks and Internet Sources

Reports generated from WADA's research grant programmes can be found under the following sections of WADA's website:

- Science and medical – <http://www.wada-ama.org/en/Science-Medicine/Research/>
- Social science – <http://www.wada-ama.org/en/Education-Awareness/Social-Science/Funded-Projects/>

WADA maintains a directory of social science researchers whose area of research touch on anti-doping. The directory can be accessed from WADA's website – <http://www.wada-ama.org/en/Education-Awareness/Social-Science/Researchers-Directory/>

The 'Legal Library' section of WADA's Web site contains articles related to various legal aspects of the Code – <http://www.wada-ama.org/en/World-Anti-Doping-Program/Legal-articles-case-law-and-national-laws/>

CAS publishes recent and archived decisions on its Web site – www.tas-cas.org

4. Appendix Material

4.1. Terminology

- Definitions of anti-doping terminology can be found in Appendix 1: Definitions of the World Anti-Doping Code – <http://www.wada-ama.org/en/World-Anti-Doping-Program/Sports-and-Anti-Doping-Organisations/The-Code/>
- A glossary of anti-doping terminology can be found on WADA's Web site – <http://www.wada-ama.org/en/Resources/Anti-doping-glossary/>

4.2. Position Statements

See the internet pages of the WADA (www.wada-ama.org), the IOC (www.olympic.org) and the international sport federations.

HEALTH-ENHANCING PHYSICAL ACTIVITY IN THE CONTEXT OF HEALTH PROMOTION

Pekka Oja and Sami Kokko

1. General Information

1.1. Historical Development

Health promotion has a relatively short history, with modern health promotion evolving in the 1970s (e.g. Lalonde's report 1974). Before this, health promotion was generally approached through biomedical and epidemiological perspectives. This meant that diseases and individual health behaviours were the central focus. The concept of health promotion was revised by the Ottawa Charter for Health Promotion (WHO 1986). The Charter defined that in health promotion it is important to: 1) build healthy public policies, 2) create supportive environments, 3) strengthen community actions, 4) develop personal skills, and 5) re-orient health services. These key action areas describe the broad scope of health promotion and health-enhancing physical activity (HEPA) today.

One of the most recent definitions of health promotion indicates that the main determinants of health are: '...people's cultural, social, economic and environmental living conditions, and the social and personal behaviours that are strongly influenced by those conditions' (International Union for Health Promotion and Education, IUHPE and Canadian Consortium for Health Promotion Research, CCHPR 2007). This definition highlights the levels of activities, when the focus shifts from individual factors towards living conditions and environments, i.e. settings in which people live daily, and their context factors. This has meant that in HEPA research and promotion also, the focus has broadened similarly.

Over the last few decades there has been a progressive decline in the amount of physical activity people achieve on a daily basis, especially those living in industrialized countries. For most people, little physical effort is involved in their work, domestic chores, transportation and leisure. Estimates of current levels of physical activity in EU countries suggest that about two thirds of the adult population do not reach the recommended levels of physical activity for health (Sjöström, Oja, Hagströmer, Smith, and Bauman 2006). Furthermore, data available from North America and Australia suggests a similar situation in many other parts of the world. Thus, a majority of the world's industrialized populations, and increasingly those in developing countries, are insufficiently active and could greatly benefit their health through physical activity. Driven by the fact that physical inactivity is a major risk factor for the most common non-communicable diseases, and that physical activity can counteract many of the ill effects of inactivity, the study of the inter-relationships between physical activity and health has emerged as a new area of research.

Although research interest on physical activity and health dates back to 1950s, significant scientific evidence on the health benefits of physical activity largely took place in the 1980s and 1990s. 'Health-enhancing physical activity' has emerged as a research field drawing its substance from diverse areas of physical activity and health sciences, with strong elements of both basic and applied sciences. The accumulating evidence-base of the health benefits of physical activity, is increasingly being adopted in major health policies of the WHO, regional organisations (such as the European Commission), and national governments. The current HEPA movement is an open, multi-disciplinary network of scientists, policy makers and practitioners who aim to increase the awareness of the health potential of physical activity for public health.

1.2. Function

In the domain of health promotion, two mainstreams can be identified. The first arises from the current public health problems that mainly relate to non-communicable behavioural-based diseases. Thus, one main research area is people's health behaviours, like levels of physical activity and physical inactivity or sedentary lifestyle. The second research focus tends to be centred on policies i.e. those contextual factors (cultural, social, economic and environmental living conditions) which policies can control, or on which they may have an effect.

The ultimate aim of health promotion is people's health-related behaviour, because health promotion is '...a process of enabling people to increase control over, and to improve, their health' (WHO, 1986); its primary function deals with activities whose purpose is to achieve those goals. This can be attained through individual and/or socio-ecological factors. The implication for research is that it is important to assess the effects and effectiveness of such activities. Indeed, evaluation and impact studies and health economics are important new areas in health promotion research.

Another factor, which directs research in health promotion, is the way health is approached. Traditionally, research has focused on single diseases and their risk factors. More recently, resources (and their promotion) that support people's healthy lifestyle has become a key focus. As a result health promotion research can address micro (individual), meso (community), or macro (societal) factors.

It is well established that health and health behaviours vary according to people's socioeconomic status. This is why health inequalities and their reduction are key targets of health promotion in both research and practice.

The domain of HEPA provides a knowledge base for the understanding of the significance and role of sport, exercise and physical activity for people's health, function and well-being. It is a multi-disciplinary research area, encompassing a wide spectrum of sport and health science disciplines. These include established sport science disciplines such as exercise physiology, sport psychology, sociology of sport, leisure studies and adapted physical activity. Pertinent medical and health science disciplines include epidemiology, clinical medicine, rehabilitation, sports medicine, preventive medicine, behavioural medicine, health education and health promotion. In addition, knowledge of related

research and policy areas, such as environmental and urban planning, transport and geography are increasingly being applied in the study and promotion of physical activity for health.

HEPA research focuses on establishing links between physical activity, fitness and health, and the respective dose-response relations; identifying the determinants of physical activity; creating methods for accurate and reliable measurement of health-related physical activity and fitness; and developing and evaluating ways to promote physical activity for health.

1.3. Body of Knowledge

The conventional health promotion activity of increasing people's knowledge is not enough. Instead multi-level approaches are required. Indeed, the Ottawa Charter changed the emphasis in health promotion towards contextual factors. Health promotion research has generated a body of knowledge on the function and effectiveness of various activities, in order to create positive pre-conditions and/or enforce more directly behavioural change. For example, in one of the most commonly studied settings in health promotion – the school – several multi-level interventions have proved successful. Common to these successes have been their multi-level approaches, ranging from policy and environmental levels to individual health literacy. Still, there is a need for more evidence on these complex interventions.

Systematic collection, review and analysis of the scientific evidence of the health benefits of physical activity have taken place largely during the past two decades. Accumulating research findings provide continuing, consistent and increasingly specific evidence on the importance of physical activity for public health.

The most comprehensive summary of the current state of the knowledge is an extensive systematic review of the scientific evidence, undertaken by the US Department of Health and Human Services (2008). According to this review, in children and adolescents there is strong evidence for: improved cardio-respiratory endurance and muscular fitness; favourable body composition; improved bone health; improved cardio-vascular and metabolic health biomarkers; and moderate evidence for reduced symptoms of anxiety and depression.

In adults and older people, there is strong evidence for: lower risk of early death; heart disease, stroke, type 2 diabetes, high blood pressure, adverse blood lipid profiles, metabolic syndrome, colon and breast cancers; prevention of weight gain; weight loss when combined with diet; improved cardio-respiratory and muscular fitness; prevention of falls; reduced depression; and better cognitive function (older people). In addition, there is moderate to strong evidence for better functional health (older people) and reduced abdominal obesity; and moderate evidence for weight maintenance after weight loss; lower risk of hip fracture; increased bone density; improved sleep quality; and lower risk of lung and endometrial cancers.

Concurrent with the accumulating evidence of the health benefits of physical activity, the understanding of the dose-responses of physical activity and health have led to physical activity recommendations for public health. Physical activity recommendations summarise the evidence on how much and what kind of physical activity enhance health and suggest target activity levels for different population groups. The most recent international recommendations were issued by the US Department of Health and Human Services (2008) and WHO (2010). Accordingly, children and youth are advised to do at least one hour of moderate-to-vigorous-intensity physical activity every day. Adults and older people are recommended to do a minimum of 150 minutes moderate-intensity or 75 minutes vigorous-intensity aerobic activity or their equivalent combination per week, and muscle-strengthening activities. Physical activity recommendations form a sound foundation for promotional policies, programmes, and interventions. Many countries, e.g. England (Department of Health, Physical Activity, Health Improvement and Prevention 2004), Switzerland (Swiss Federal Office of Sports 2004), Finland (Fogelholm, Suni, Rinne, Oja, and Vuori 2005), Austria (Titze et al. 2010), Canada (Canadian Society for Exercise Physiology 2011), and United Kingdom (Department of Health 2011) have recently issued their own recommendations for health-enhancing physical activity.

While the evidence on the health risks of inactivity and health benefits of increased activity are becoming well established, how to increase effectively physical activity on individual, group, community and population levels remains a challenge for HEPA research and practice. Theoretically based models and practices of physical activity promotion are developing, based on the principles of health promotion (Green and Kreuter 1999), health behaviour change (Glanz, Lewis, and Rimer 1997) and ecological models of health behaviour (Sallis and Owen 1999). The latter suggests that in addition to individual factors, the social and physical environment should be a focus for interventions in population physical activity.

Selected national health-enhancing physical activity programmes (Cavill, Kahlmeier, and Racioppi 2006) and case studies (Kelly, Cavill, and Foster 2009) have been analysed in order to identify good practice. These analyses indicate which elements are important for successful promotional efforts, as well as the importance of cultural and political sensitivity of the chosen approaches. An extensive review (WHO 2009) provides an overview summary of tried and tested dietary and physical activity interventions aimed primarily at the prevention of non-communicable diseases. Evidence for effective interventions exists in eight settings: policy and environment, mass media, school, workplace, community, primary health care, older adults, and religious community. Overall, multi-component interventions that are adapted to the local context, and use the existing social structures appear to be most successful.

The evidence on the health benefits of physical activity has led to new policy development. The WHO has issued the 'Global Strategy on Diet and Physical Activity' (2004) and guidelines on how to implement it (WHO Europe 2006); the WHO Europe has published the 'European Charter on Counteracting Obesity' (WHO Europe 2006) and its follow-up on physical activity (WHO Europe 2007); and the European Commission has placed physical activity firmly in its public health (EC 2007a) and

sport (EC 2007b) policies. HEPA has also been integrated into national health policies. An analysis of national policy documents on the promotion of physical activity for health (Daugbjerg et al. 2007) identified 49 documents in Europe: 29 in health promotion, 12 in transport, 7 in sports, and one in environment.

Editor's note: since this chapter was written, "Designed To Move" (2012) has been co-authored by Nike, the American College of Sports Medicine and ICSSPE. Its intention is to influence policy makers of the crucial importance of physical activity among the world's population, especially children and young people. <http://www.icsspe.org> <http://www.acsm.org> <http://www.designedtomove.org>

1.4. Methodology

As multi-disciplinary research areas, both health promotion and HEPA research employ a wide variety of research methods applied from the relevant scientific disciplines. These include physiological, psychological, sociological and measurement methodology, as used in sport sciences and health promotion research. Epidemiological, clinical and basic medical methodologies, are utilized in studying the health effects of physical activity. Methods from health education and health promotion research are also applied when studying how to change the physical activity behaviour of individuals, communities and populations. Methods used in transport, environmental, geography and social marketing research is increasingly applied in the study of the promotion of physical activity.

The HEPA research on individual physical activity behavioural change is anchored to a number of theories and models of behavioural modification. An integrated construct, the Trans-theoretical Model (Prochaska and Marcus 1994), provides theoretical bases for individual physical activity counselling and guidance in different settings. Socio-ecological models of health behaviour describe multiple levels of social, cultural and physical environmental factors relevant to health behaviour change (Sallis and Owen 1999), and provide directions for environmental and policy interventions.

1.5. Relationship to Practice

Health promotion and health-enhancing physical activity research are primarily practice-oriented in that their eventual goal is a positive impact on public health. The key HEPA message from the population perspective – a sustained increase in daily physical activity – has significant promotional implications on individual, community, environmental and policy level. Promotional measures need to foster cultural, social, economic and environmental support for people to engage in physical activity as part of day-to-day living. Changes in both living condition-related and individual-based factors need to be pursued.

1.6. Future Perspectives

A health promotion perspective widens the previous challenges towards questions of how to make individuals, communities and populations more active and/or reduce sedentary behaviours. Basic questions for research here are: what works and why? Many community-level interventions are still too narrow, or their methods undeveloped. Complex settings and interventions need multi-strand research configurations. Multi-disciplinary efforts between sciences like sport, health, environmental, transportation, urban and community planning, architectural and economical, are needed. Also long-term behavioural changes require further investigation.

Although a sound scientific evidence base on the relationships between physical activity, fitness and health has been established, considerable challenges continue to face HEPA research. Of particular importance is further understanding the dose-response relationships of physical activity, specific health outcomes and the biological mechanisms underlying such interrelations.

Research concerning health promotion in general and health-enhancing physical activity in particular, needs also to be practice-driven in the future. It has to serve the needs of decision makers, professionals and grass roots practitioners, who design and implement health policies and practices.

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2. Organisational Network

The international health-enhancing physical activity research and promotion community is loosely organised and operates mainly as part of relevant scientific organisations' activities or as informal and loosely structured networks. Only recently have HEPA-dedicated organisations been established.

2.1. Major International Organisations and Networks

HEPA research is integrated into the activities of several international scientific organisations, including:

- International Society of Behavioral Medicine (ISBM)
- International Society of Behavioral Nutrition and Physical Activity (ISBNPA)
- International Society for Physical Activity and Health (ISPAH).

International HEPA networks include:

- Agita Mundo
- International Physical Activity and Environment Network (IPAEN)
- Physical Activity Networks of the Americas (RAFA/PANA).

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- European Network for the Promotion of Health-Enhancing Physical Activity (HEPA Europe) <www.euro.who.int/hepa>
- Physical Activity Networks of the Americans (RAFA/PANA) <www.rafapana.org>
- At the national level HEPA research is appearing as a new topic on the working agenda of many national scientific organisations in the area of sport and health sciences. Increasingly activities are seen particularly in Europe, North America and Australia. For instance the British Heart Foundation National Centre for Physical Activity and Health (BHFNC) was established in April 2000 with funding from the British Heart Foundation (BHF) <www.bhfactive.org.uk>
- While HEPA is being increasingly included in sport and health science programmes at universities and research institutions throughout the world, only a few institutions focus primarily on HEPA research. Three WHO collaborating centres have HEPA as their special focus area:
 - ◇ UKK Institute, Centre for Health Promotion Research, Tampere, Finland <www.ukkinstituutti.fi>
 - ◇ Physical Activity and Health Branch, US Centres for Disease Control and Prevention, Atlanta, USA <www.cdc.gov/nccdphp/dnpa>
 - ◇ Department of Preventive Medicine and Public Health, Tokyo Medical College, Tokyo, Japan <www.tokyo-med.ac.jp>

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

Due to the multi-disciplinary natures of health promotion and HEPA relevant scientific information is published in and accumulates through a variety of sources covering varying areas of sport, medicine, public health and behavioural sciences.

3.1. Journals

The following list includes journals which focus primarily on health promotion and health-enhancing physical activity:

- *American Journal of Health Promotion*
- *Global Health Promotion*
- *Health Education and Behavior*
- *Health Education Research*
- *Health Promotion International*
- *Journal of Ageing and Physical Activity*
- *Journal of Leisure Studies*
- *Journal of Physical Activity and Health.*

3.2. Reference books, Encyclopaedias, etc.

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Tones, K., and Green J. (2004). *Health promotion. Planning and strategies*. New Delhi: Sage.

3.3. Book Series

American College of Sports Medicine. Exercise and Sport Sciences Reviews. Williams and Wilkins.

3.4. Congress/Workshop Proceedings

Medicine and science in sports and exercise (2001). Dose-response issues concerning physical activity and health: An evidence-based symposium. Supplement to 33(6), S345-S641.

3.5. Data Banks

Databases

- Cochrane. Systematic reviews in medicine. More information about Cochrane collaboration: <http://www.cochrane.org/> Link to the database: <http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME>
- Medline. Medicine. National Library of Medicine, USA. Available in many different databank or library network services, e.g. Ovid. Free of charge: PubMed <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>
- Physical Education Index/CSA. <http://www.csa.com/>
- Sport. Sports sciences; international sport science database, available in many different databank services, eg. Ebsco
- SPORTDiscus is available as Index only or with Full Text providing full text for 550 journals indexed in SPORTDiscus. This authoritative file contains full text for many of the most used journals in the SPORTDiscus index – with no embargo
- Spolit Sports Sciences/Germany.

Available free of charge

- <http://www.bisp-datenbanken.de>
- Databases and full text journals offered by the publishers:
 - ◇ Ebsco: <http://www.ebscohost.com/>
 - ◇ ScienceDirect: <http://sciencedirect.com/>
 - ◇ SpringerLink <http://www.springerlink.com/home/main.mpx>

- ◇ Web of Science:
- ◇ <http://scientific.thomson.com/products/wos/>
- Open access journals:
 - ◇ Directory of open access journals (DOAJ): <http://www.doaj.org/ljbs?cpid=20/>
 - ◇ PubMedCentral <http://www.pubmedcentral.nih.gov/>

3.6. Internet Sources

American College of Sports Medicine:

<http://www.acsm.org/>

US Centres for Disease Control and Prevention, Health Topic: Physical Activity and Health

<http://www.cdc.gov/physicalactivity/index.html>

EU

ALPHA: Assessing Levels of Physical Activity

<http://sites.google.com/site/alphaprojectphysicalactivity/Home>

EU platform for action on Diet, Physical activity and Health

http://ec.europa.eu/health/ph_determinants/life_style/nutrition/platform/platform_en.htm

European Network for Action on Ageing and Physical Activity (EUNAAPA):

http://ec.europa.eu/health/ph_projects/2005/action3/action3_2005_6_en.htm/

Health-EU Portal: the official public health portal of the European Union

http://ec.europa.eu/health-eu/index_en.htm

WHO

International inventory of documents on physical activity promotion (HEPA Europe, WHO)

<http://data.euro.who.int/PhysicalActivity/?TabID=107125>

WHO: Global strategy on diet, physical activity and health

<http://www.who.int/dietphysicalactivity/en/>

WHO: Move for Health –day

<http://www.who.int/world-health-day/en/>

WHO Europe, European Network for the Promotion of Health-enhancing Physical Activity (HEPA Europe):

<http://www.euro.who.int/en/what-we-do/health-topics/disease-prevention/physical-activity/activities/hepa-europe>

4. Appendix Materials

4.1. Terminology

Not applicable.

4.2. Position Statements/Recommendations

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SPORT AND DEVELOPMENT

Marianne Meier, Usha Selvaraju, Jackie Lauff, Bert Meulders and Joseph Maguire

1. General Information

1.1. Historical Development

Sport and Development is an emerging area within sport science and physical education. As an academic field it is very new and is attracting much interest around the world. In the 1990s, early pioneers in this field included organisations such as SCORE, MYSA and Right To Play that began to use sport in a developmental context.

Over the last decade, sport and development has become an established policy area with international recognition. World leaders recognised the power of sport and its values at the 2000 United Nations Millennium Summit and at the 2002 Special Session on Children (UNICEF, 2008). In 2002, international attention intensified with the creation of a UN Inter-Agency Task Force of 10 organisations that convened to review activities involving sport within the UN system. The Task Force developed a comprehensive report titled, 'Sport for Development and Peace: Towards Achieving the Millennium Development Goals,' which concluded that sport is a powerful and cost-effective way to advance the Millennium Development Goals (United Nations, 2003).

A number of high-profile conferences emerged and these served to further reinforce the role of sport as a means to promote health, education, development and peace. In February 2003, the first International Conference on Sport and Development took place in Magglingen, Switzerland which highlighted that development organisations and sports organisations not only share common goals, but also common objectives and could largely benefit from worldwide cooperation. Another international conference, the 'Next Step,' took place in Amsterdam, the Netherlands with the aim of gathering practitioners and planners together to focus on the development benefits of investing in sport.

At the end of 2003, the UN General Assembly adopted a resolution (58/5) entitled, 'Sport as a means to promote Education, Health, Development and Peace', calling on governments, UN funds and programmes and sport-related institutions to promote the role of sport and physical education for all when furthering their development programmes, and to include sport and physical education as a tool to contribute to broader aims of development and peace (United Nations, 2003).

In 2004, Right to Play co-hosted a Round Table Forum entitled, 'Harnessing the Power of Sport for Development and Peace' during the (XXVIII) Olympic Games in Athens, Greece. The Round Table Forum

brought together political leaders and experts in development to showcase the potential of sport in achieving social, economic, health and development goals and thus initiated the first steps towards the creation of a policy framework for sport and development around the world. The main overall outcome of the Athens Roundtable Forum was the establishment of the Sport for Development and Peace International Working Group as a four-year policy initiative to articulate and promote the adoption of sport and development policies by governments (SDPIWG, 2008). Also in 2004, the UN adopted a second Resolution on Sport and Development (59/10) which expanded on these goals to further include aspects of youth, gender equality and social inclusion (United Nations, 2004).

The United Nations declared 2005 the International Year of Sport and Physical Education, which provided a unique opportunity to focus the world's attention on the importance of sport in society and on how sport and physical education programmes can be used as tools to help combat challenges such as extreme poverty, conflict and HIV/AIDS and help achieve the Millennium Development Goals.

Building on previous international policy developments in sport science and physical education and a wealth of sport development experience, these latest international milestones have connected the policy areas of sport and development cooperation in recognition of their similar goals and purpose. Moreover, these developments have stimulated a rapid growth in the implementation of sport and development projects worldwide and engaged a broad spectrum of organisations, institutions and agencies.

1.2. Function

The function of sport and development is more than developing sporting systems, infrastructure and opportunities, although this was central to the activities of the first so-called sport and development NGOs. The aim of Sport and Development is to work in partnership with people, organisations and agencies across the world to help assist countries with the creation of their own sporting systems, promote the power of sport as a tool for human and social development and form and maintain strategic partnerships with international partners. Sport and development terminology is used to cover many different areas and most generally it is used to indicate the use of sport to promote and address specific societal goals. These goals include areas such as health, economic development, gender, peace, disability, trauma and child development.

Development is a process of enlarging people's choices and increasing the opportunities available to all members of society. Based on the principles of inclusion, equity and sustainability, emphasis is on the importance of increasing opportunities for the current generation as well as generations to come. Sport can impact on development outcomes and help to build these capabilities in individuals and communities.

According to the Final Report of the Sport for Development and Peace International Working Group:

Strong programmes combine sport and play with other non-sport components to enhance their effectiveness and are delivered on an integrated basis with other local, regional and national development and peace initiatives so that they are mutually reinforcing. Programmes seek to empower participants and communities by engaging them in the design and delivery of activities, building local capacity, and pursuing sustainability through collaboration, partnerships and coordinated action. (SDPIWG, 2008)

Sport and physical education play a vital role at all levels of society. For the individual, sport enhances one's personal abilities, general health and self-knowledge. On the national level, sport and physical education contribute to economic and social growth, improve public health, and bring different communities together. On local and global levels, if used consistently, sport and physical education can have a long-lasting positive impact on development, public health, peace and the environment. Sport is a social and cultural phenomenon that can have positive and negative effects in different contexts. The potentially negative impacts of sport need to be safeguarded against to ensure that sport is in fact meeting identified objectives. Negative aspects of sport include doping, corruption, child labour amongst others and if used in the wrong way, sport can have detrimental effects on development outcomes.

Access to and participation in sport and physical education provide an opportunity to enjoy social and moral inclusion for populations otherwise marginalised by social, cultural or religious barriers. Co-operative sport programmes can play an important role in peace-building, conflict resolution and social inclusion. Through sport and physical education, individuals can experience equality, freedom and a dignifying means for empowerment, which can be particularly valuable for girls and women, people with disabilities, people living in conflict areas and those recovering from trauma (NCDO, 2004).

1.3. Body of Knowledge

The academic field of sport and development is relatively young and can be considered in its 'embryonic' stages. A body of evidence has been developed through research, project evaluations and case studies. In 2006, the Sport for Development and Peace International Working Group collated the existing literature and research surrounding Sport and Development in the following categories:

- Individual Development
- Health Promotion and Disease Prevention
- Promoting Gender Equality
- Social Integration and the Development of Social Capital
- Peace Building and Conflict Prevention or Resolution
- Post-Disaster Trauma Relief and Normalisation of Life

- Economic Development
- Communication and Social Mobilisation.

Expanding on this collection of evidence, a series of literature reviews were conducted in 2007 by the University of Toronto, commissioned by the Sport for Development and Peace International Working Group (SDPIWG, 2007).

1.4. Methodology

There is no uniform methodology that is used in the implementation or evaluation of sport and development projects. Depending on the specific goals, a project may include methodologies from various fields. For example, a project that uses sport to achieve health outcomes might use methods from health promotion. Similarly, a project using sport to educate and raise awareness of HIV/AIDS prevention might utilise methods from epidemiological studies.

Strategies and methods of monitoring and evaluation of sport and development programmes are appearing as governments, institutions and organisations strive to build on the evidence base of sport and development. Empowerment, participatory approaches and sustainability are very central themes in the discourse of best practices and whilst these are not evaluation instruments, they are key considerations in programme development. Influences of development theory are also found in applications of logical framework approaches and innovative evaluation methods such as participatory video techniques (Biddle, 2006).

As sport and development continues to develop as an academic discipline, influences from other fields such as sociology, psychology and sport management will continue to influence data collection, analysis and the interpretation of Sport and Development research.

1.5. Relationship to Practice

While the reach of global sport is perhaps not in question, the actual impact of modern achievement sport has been and continues to be across the planet and whether it is conducive to the United Nations Millennium Goals needs to be assessed (Maguire, 2005). After a period of rapid growth, there have been claims that sport and development projects need to introduce quality measures to ensure that they do, in fact, meet intended development aims (van Eekeren, 2006).

The absence of a strong body of compelling evidence in support of sport and development is repeatedly identified as a barrier to convincing policy makers and private sector donors to increase support for the field (SDPIWG, 2006). Moreover, sport has received virtually no academic attention in mainstream development texts (Desai and Potter, 2002; Potter, 2004).

Monitoring and evaluation is gaining increasing attention and new tools are being developed to enable more effective data collection and analysis of programme effectiveness (Coalter, 2006). Given the large number of existing sport and development projects across the world, there is much potential for academic research to collaborate with existing stakeholders. A realistic picture of global sport and its impact on people, nations and civilisations across the globe is needed.

1.6. Future Perspectives

With the international focus and attention on sport and development, there needs to be increased research output to evaluate and guide policy development in this growing area of development. Closer working relationships between the sport sector and the development sector are essential in creating cooperative research and development. Stronger links are also emerging between the sport and business sectors (May and Phelan, 2007).

Furthermore, the Sport for Development and Peace International Working Group identified a number of future needs for the sport and development arena to strengthen network infrastructure including:

- Articulation of a common vision and tangible aims
- A framework for action for stakeholders from all sectors
- Opportunities for sharing evidence, success stories and failures
- Development in progress monitoring and reporting
- Coordinated research and scientific investigation
- Greater emphasis on the power of sport and its impact on women and people with disabilities.

Recent years have seen great expansion in networking, online collaboration and sharing of information, knowledge and project examples. Tertiary training programmes are needed to further enhance the quality of programme delivery, the capacity of project staff and the volume of evidence-based research.

References

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- Maguire, J. (2005). Power, cultures and global sport: Sport development or development through sport? In G. Doll-Tepper, V. Steinbrecher, D. Dumon, and A. Chima (Eds.), *International Forum on Sport and Development proceedings*. Berlin.

- May, G., and Phelan. J. (2005). *Shared goals: Sport and business in partnerships for development*. London: IBLF.
- NCDO, NOC, NSF. (2004). *Toolkit sport for development*. Amsterdam, The Netherlands.
- Potter, R. B. (2004). *Geographies of development*. Harlow: Prentice Hall.
- SDPIWG. (2007). Literature reviews on sport for development and peace. Sport for Development and Peace International Working Group. Retrieved April 19, 2008. <http://iwg.sportanddev.org/data/htmleditor/file/Lit.%20Reviews/literature%20review%20SDP.pdf>
- SDPIWG. (2006). Sport for development and peace: From practice to policy. Preliminary report of the Sport for Development and Peace International Working Group, Retrieved April 19, 2008. <http://iwg.sportanddev.org/data/htmleditor/file/SDP%20WG/Right%20to%20Play%20-%20From%20Practice%20to%20Policy%20book.pdf>
- UNICEF. History of sport and the UN. UNICEF. Retrieved April 20, 2008. www.unicef.org/sports/index_40837.html
- United Nations. (2003). Towards achieving the millennium development goals through sport. United Nations. Retrieved April 20, 2008. www.un.org/themes/sport/reportE.pdf
- van Eekeren, F. (2006). Sport and development: Challenges in a new arena. In Auweele, Y., Malcolm, C., and Meulders, B. (Eds.), *Sport and development*. Cape Town: Iannoo Campus.

2. Organisational Network

2.1. Major International Organisations and Networks

Numerous United Nations funds and programmes, international government and non-governmental organisations are actively involved in sport and development. These include:

- ICSSPE
- ICSA
- International Labour Office (ILO)
- International Olympic Committee (IOC)
- International Paralympic Committee (IPC)
- FIFA
- Kicking Aids Out
- NCDO
- Netherlands Ministry of Health, Welfare and Sport (VWS)
- Netherlands Olympic Committee and Confederation of Sport (NOC*NSF)
- The International Platform on Sport and Development
- Right to Play
- Sports Sans Frontiers
- Streetfootballworld
- SCORE

- Swiss Academy for Development
- Swiss Agency for Development Cooperation (SDC) / Swiss Academy for Development (SAD)
- UEFA
- UN Programmes and Funds
- UN Office of Sport for Development and Peace
- UNHCR
- UNICEF
- UNDP
- UNEP.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

At the regional level, some developing countries are leading the way with creating regional networks for sport and development. Additionally, further resources are being developed by individual regions and these details can be found in the Sport for Development and Peace International Working Group's Interim Report.

National Level:

- Australian Sports Commission
- Commonwealth Games Canada
- FK Norway
- KNVB
- MYSA
- National Sports Council Zambia
- Norwegian Olympic Committee and Confederation of Sports (NIF)
- South African Sports Commission
- Sport Canada
- UK Sport.

Specialised Centres:

- University of Toronto
- Katholieke Universiteit Leuven
- University of Stirling.

2.3. Specialised International Degree Programmes

A number of international undergraduate and postgraduate programmes related to sport and development:

Sports Administration/International Studies at the University of Ohio

This course is an experimental (non Master or Bachelor) course hosted by the department of Sports of Administration with a partnership with African Studies and the Center for International Studies. The course focus on sport and development in African nations, material presented includes other worldwide examples to gain a true understanding of the power of sport and how areas such as coaching education, health, life skills, and sport and facility management are adapted in the specific context of sport and development.

Sport and Recreation Studies: International Sport Management Specialisation at George Mason University

This course has a concentration in international sport management with a particular emphasis on sport and international development. The programme prepares students for careers in international sport. The course seeks to fill a gap by focusing on the links between sport and sustainable development projects. Specific courses include: Sport and International Development; The Global Soccer Industry; Governance and Policy in International Sport; and Sport in the Global Marketplace.

Master in Sustainable Peace Through Sport at the International University of Monaco and the UN-mandated University of Peace, Costa Rica

The degree course seeks to produce a well-trained group of 'Engineers for Peace through Sport'. The course focuses on how to harness the potential of sport as a strategic tool for building and promoting peace, specifically in post-conflict areas and regions affected by extreme poverty or lack of social cohesion. Designed for young graduates and executives, the joint Peace and Sport / IUM and UPeace Master's degree combines academic knowledge about business, the sport industry and the peace-building process with practical skills.

Undergraduate Module on Contemporary Issues in Sport at York St John University

This course module focuses on the use of sport as a social good. This approach is taught in contrast with the study of 'sport for sports' sake'. The module examines approaches of using sport for development within communities. The course includes a number of case studies of projects worldwide, including the 'Positive Futures' initiative in the UK and a variety of Sport-for-Development projects in sub-Saharan Africa.

Undergraduate and Postgraduate course on Sport in Cooperation for Development at the Sport, Civil Engineering and Design Polytechnic, University of Madrid

Since 2007, the group for Cooperation DIM is implementing an annual short course about physical activity and sport in cooperation for development, various participatory workshops and involvement in development projects, as part of an integral and participatory approach to education. Since 2009, two subjects ('Physical Activity and Sport in Cooperation for Development' (6 credit points); 'Psychosocial, communitarian and intercultural action through physical activity and sport after disaster and conflict' (6 credit points)) are officially part of the University Degree in 'Physical Activity and Sport Sciences' and

of the interfaculty supplement studies of 'Expert in Cooperation for Development' of the Technical University of Madrid. These courses will be converted to the Masters in 'Technologies for Human Development and Cooperation'. In the same fields, two subjects will be part of an International Master in Physical Activity and Sport Sciences, starting in 2010/2011, offering a specialisation in Sport for Cooperation for Development. The contents of the inter-disciplinary course include methodology and research from the Sport Sciences and from the Development Studies.

Masters in Sport Management and Governance at Utrecht School of Governance, Utrecht University

The main focus of the course is to examine the social engagement of non-profit organisations engaged in sports. The course connects scientific approaches to sport management, management of diversity and social issues to the everyday practice of organisations involved in sport. The Masters in Sports Management and Governance focuses on the changing sports industry, to develop policies and to provide insights into supervising and managing clubs and associations.

Masters in Sport and Development at Southampton Solent University

This course provides an insight into international and UK study in sport and development. The course targets sport and development professionals and aims to advance skills and knowledge in the sport and development sector.

Masters in Sport Management, with Option to Focus on Sport Development at Auckland University of Technology

National and international sport development issues are examined in this course, with a view to identifying contemporary approaches to address them. The issues tackled include development through sport, development of sport, future patterns of sport delivery, the relationship between professional/elite sport and mass participation.

Undergraduate, Postgraduate and Doctoral Programmes in Sport for Development at the University of Johannesburg

The University of Johannesburg offers a number of courses that include sport and development components within the Sociology of Sport.

3. Information Sources

3.1. Journals

There are few journals dedicated to this specific topic. Research on this topic does, however, appear in a range of social sciences, sport science and physical education journals.

Journals with sport and development themes include:

- *Impumelelo journal* – An inter-disciplinary electronic journal of African Sports. Initiated in 2005, six volumes of the journal have been published, with recent volumes focusing specifically on the FIFA World Cup 2010 and its consequences for Africa
- *Journal of Sport for Development (JSFD)* – An open-access journal aiming to advance, examine and disseminate best practices and evidence of effectiveness of using sport to promote international development, health and/or prevent conflict.

3.2. Reference Books, Encyclopaedias etc

Coalter, F. (2007). *A wider social role for sport: Who's keeping the score?* London: Routledge.

Coalter, F. (2006). *Sport-in-development: A monitoring and evaluation manual*. London: UK Sport.

Keim, M. (2003). *Nation-building at play*. Meyer and Meyer: Germany.

Chappell, R. (2007). *Sport in developing countries*. London: Roehampton University.

3.3. Book Series

The *Supporter Magazine* is a free publication on the impact of sport, produced by NCDO (National Committee for International Cooperation and Sustainable Development). The magazine features articles and opinion pieces related to the use of sport in combating poverty, discrimination, injustice, war and disease.

3.4. Conference/Workshop Proceedings

The outcomes of various Sport and Development Conferences are contained in proceedings, reports and declarations.

- UK Sport. (2007). Report on the Next Step Conference in Windhoek, Namibia 2007
- Vanden Auweele, Y., Malcolm, C. and Meulders, B. (Eds.) (2006). *Sport and Development*. Cape Town: Iannoo Campus
- Second Magglingen Conference Sport and Development, November, 2005
- Sport and Development Conference (2005). *Economy, Culture and Ethics*, Bad Boll, Germany
- UK Sport. (2005). Report on the Next Step Conference in Zambia
- Magglingen Declaration, 2005
- Magglingen Declaration and Recommendations, 2003.

3.5. Data Banks

An International Platform on Sport and Development is maintained by the Swiss Academy for Development and serves as an information resource centre dedicated entirely to sport and development. It is also a communication tool for those with an interest in sport and development to share ideas, information and experience.

International Platform on Sport and Development: www.sportanddev.org

3.6. Internet Sources

International Olympic Committee

www.olympic.org/uk/organisation/missions/humanitarian/index_uk.asp

Sport for Development and Peace International Working Group

<http://iwg.sportanddev.org>

Sport for Development and Peace: Preliminary Report

<http://iwg.sportanddev.org>

Sport and Development

www.sportdevelopment.org (Netherlands site)

Sport and Development Toolkit

www.toolkitsportdevelopment.org

UN Report on Sport for Development and Peace

www.worldvolunteerweb.org

UN Office of Sport for Development and Peace

www.un.org/themes/sport/

Value of Sport Monitor

www.uksport.gov.uk/pages/international_development/

4. Appendix Materials

4.1. Terminology

As with other academic disciplines, terminology and definitions are often challenged and critiqued and there are many different interpretations of the concept of Sport and Development. The terms 'Sport and Development', 'Sport for Development', 'Sport for Development and Peace' are often used interchangeably in practice and there is ongoing academic debate surrounding these definitions. The terms 'Sport Plus' and 'Plus Sport' offer accepted differentiations regarding the role of sport in development.

'Sport Plus' focuses on sport-related outcomes with the benefits of learning new sports skills and/or improved health and social integration through direct involvement in sports. While health and development outcomes can accompany these sports activities, they are not the primary objectives.

The 'Plus Sport' approach emphasises sport as a means to an end and uses sport-based initiatives or sport networks paired with public health, conflict resolution or other methodologies to achieve development gains.

4.2. Position Statements

Resolution European Parliament on Sport and Development

www.europarl.eu/int

South African White Paper 'Getting the Nation to Play'

www.srsa.gov.za/whitepaper.asp

Towards Achieving the Millennium Development Goals through Sport

www.un.org/themes/sport/reportE.pdf

United Nations Resolutions

www.un.org/sport2005/resources/resolution.html

Free Statement

As this policy area continues to grow, the relationships between sport and development and other thematic disciplines in sport science and physical education should be strengthened. The scope of sport and development has great potential for cross-disciplinary partnerships to further the research agenda and improve theoretical and practical applications in this diverse field.

SPORT AND HUMAN RIGHTS

Mary Hums and Eli A. Wolff

1. General Information

The field of sport and human rights examines the definition and understanding of sport as a human right – both the right to participate and compete in sport, and human rights concerns within the realm of sport. This has been addressed both by sport organisations, such as the International Olympic Committee and non-sport organisations, such as the United Nations. The field of sport and human rights also explores the utilization of sport as a vehicle to promote human rights. Individual athletes, sport administrators, and more recently, researchers, have used the platform of sport to educate people about human rights. Developing and analysing the intersections of sport and human rights is essential to furthering a global awareness of social justice in, and through, sport.

1.1. Historical Development

In the greater discussion about human rights, sport has traditionally been left out of the conversation. According to Lord and Stein (2009, p. 251-252), 'right related to sport, recreation, leisure and play remain on the sidelines of human rights practice.' This has gradually changed over the years. Sport or physical activity has now been included in a number of United Nations documents. The articulation that sport is a human right is contained directly in Article 1 of the 1978 UNESCO Charter on Physical Education and Sport. Language regarding sport as a human right is also contained in the subsequent Convention on the Elimination of Discrimination against Women (1979), the International Convention Against Apartheid in Sports (1985), the Convention of the Rights of the Child (1989) and, most recently, the Convention on the Rights of Persons with Disabilities (2006). Although these conventions address specific populations (gender, disability), the principles within them are transferrable to all. In its 2003 document *Sport for Development and Peace: Towards Achieving the Millennium Development Goals*, the United Nations Inter-Agency Task Force on Sport for Development and Peace recognised that sport and play are repeatedly acknowledged as a human right. This does place a responsibility on governments, non-governmental organisations, sport governing bodies, and sport managers to make sure there is access for all to sport and physical activity. Having the United Nations codify sport and human rights in international conventions, helps illustrate the importance of the discussion of sport in the human rights conversation. Although the policies for sport and human rights are in place, the next step is moving toward implementation, measurement and evaluation of how these policies are being implemented. Sport for development is rooted in the principles of sport and human rights; hence, there is a strong connection between these two areas. For example, many sport for development agencies serve the same populations as those outlined in the United Nations conventions about human rights.

In addition, numerous individuals and organisations have used sport to promote human rights. For example, the USA's John Carlos and Tommie Smith stood on the medal podium at the 1968 Mexico City Olympic Games with fists raised in the Black Power salute. There has been a marked growth in the number of NGOs and government agencies which espouse human rights both in and through sport. The United States Agency for International Development, Human Rights Council of Australia, and Canadian International Development Agency are examples of government agencies involved in sport and human rights.

Olympian Johann Koss founded Right to Play, which uses the power of sport to better people's lives. Sport 4 Socialisation in Zimbabwe uses adapted and integrated leisure activities as a means to raise awareness about disabilities and also HIV/AIDS specifically, and to promote inclusion of vulnerable groups. Peace Players International uses basketball and life skills programming to bring together thousands of children from diverse cultural backgrounds. The mission of Grassroot Soccer is to use the power of soccer to educate, inspire, and mobilize communities to stop the spread of HIV. The Afghan Youth Sport Exchange seeks to create future sport leaders while working to address human rights issues through sport. Research on implementation and impact of these types of programmes has been very limited. A few authors have examined the impact of sport for development programmes (See chapter on sport for development), but there is much research yet to be done to measure the impact and sustainability of these programmes.

1.2. Function

The discussion of sport and human rights is intended to further knowledge and understanding of sport as a human right to examine the extent to which the practice of sport is a human right. Work in this area examines human rights issues and needs within the sphere of sport. A second function of sport and human rights research explores how sport is utilized as a platform to promote human rights. This work looks at the way in which sporting activities and events serve as a vehicle for addressing broader human rights issues. As more organisations begin to embrace the idea of sport and human rights through programming, researchers now need to monitor and evaluate how well these programmes are doing. Are they meeting the needs of the populations they claim to serve? Are they sustainable? In addition, researchers using legal and policy analysis frameworks are now starting to analyse the implementation of the United Nations conventions related to sport and human rights.

1.3. Body of Knowledge

The basic tenets of sport and human rights are outlined in the aforementioned United Nations documents. In addition, a number of sport scholars from different disciplines, including sport sociology (Donnelly, 2008; Donnelly and Kidd, 2006), sport philosophy, sport history (DaCosta, Abreu, and Miragaya (2006), and more recently, sport management (Hums, Moorman and Wolf, 2009;

McArdle, 2006; Mushett and Cody, 2011), have weighed in on the topic, as evidenced by the references listed below. The majority of these works addressed sport as a human right as opposed to using sport as a platform to promote human rights. Given the complexity of human rights, which includes issues related to gender, age, race, and religion, it is no surprise that the study of human rights emanates from inter-disciplinary approaches. Universities which have centres focused on human rights usually have faculty affiliated with them from disciplines such as sociology, philosophy, political science, law, and occasionally, sport. Sport and human rights has also been a topic of interest to Olympic scholars and those who examine the concept and application of Olympism and Olympic values.

1.4. Methodology

Most of the academic work in the area of sport and human rights has been qualitative in nature. Recent studies focused on conceptual analysis, policy development, and legal interpretation. Much of the work examines policy development in sport organisations. Scholars in the area of legal aspects of sport are also becoming interested in the topic. For example, with the recent ratification of the Convention of Rights of Persons with Disabilities, government agencies are trying to determine what their legal responsibilities are now for meeting the language of that Convention.

1.5. Relationship to Practice

Some research on sport and human rights is now being implemented by sport practitioners. However, to date there has been little follow-up research on the impact of the programmes. In particular, there is a need for more measurement and evaluation research – are programmes delivering on their promises? Are they locally sustainable? A number of sport and non-sport organisations work to further sport and human rights at different levels. The International Olympic Committee furthers the values of sport and human rights through programmes such as Sport for All, the Women in Sport Commission, and the Olympic Education programmes of International Olympic Academy. The International Paralympic Committee released a Position Statement on Human Rights. Right to Play is committed to the basic ideals of promoting sport as a human right. FIFA and the World Health Organisation (WHO) partnered to promote a human rights approach to HIV/AIDS. Non-sport organisations have also become involved, as seen by the work done by Handicap International and Rehabilitation International to support the crafting and implementation of Article 30.5 of the Convention on the Rights of Persons with Disabilities.

1.6. Future Perspectives

As the study of sport and human rights continues to evolve, it needs to recognise and embrace multi-disciplinary approaches, as well as contributions from policymakers, practitioners and researchers to inform and learn from each other. Work continues to emerge that examines the articulation of the practice of sport as a human right, as well as ongoing studies on a myriad of human rights issues and concerns within sports. Furthermore, there is ongoing analysis into the potential for sport activities to serve as a vehicle for the promotion of human rights. Given our global society, with increased awareness of human rights violations, there will be increased awareness of defining and implementing sporting rights, and utilizing sport to promote human rights in general. The sport and human rights field will continue to be relevant and essential.

2. Organisational Network

2.1. Major International Organisations and Networks

- International Disability in Sport Working Group <http://www.sportanddev.org/en/organisations/see-all-organisations/international-disability-in-sport-working-group-idiswg.htm>
- International Working Group on Women and Sport http://iris.lib.neu.edu/cgi/viewcontent.cgi?article=1013&context=sport_staff_presandsei-redir=1#search=%22International%20Disability%20Sport%20Working%20Group%22
- Sport for Development and Peace International Working Group <http://www.un.org/wcm/content/site/sport/pid/6229>

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

- Olympism and Development Centre at Brown University <http://www.globalconversation.org/2011/01/24/olympism-and-development-center>
- Inter-disciplinary Ethics Applied, University of Leeds www.idea.leeds.ac.uk
- Human Rights Council of Australia <http://hrca.org.au>
- University of Padua Interdepartmental Centre for Human Rights <http://unipd-centrodirittiumani.it/it/news/Nazioni-Unite-il-valore-dello-sport-per-lo-sviluppo-e-la-pace/2188>

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals (Articles)

- DaCosta, L., Abreu, N., and Miragaya, A. (2006). Multiculturalism and universal proclaimed values in the Olympic Movement: An approach to human rights and sport development? *ICSSPE Bulletin*, 48.
- Donnelly, P. (2008). Sport and human rights. *Sport in Society*, 11, 381-394.
- Donnelly, P., and Kidd, B. (2006). Achieving human rights in and through sports. *ICSSPE Bulletin*, 48.
- Hums, M. A., Moorman, A. M., and Wolff, E. A. (2009). Emerging disability rights in sports: Sport as a human right for persons with disabilities and the 2006 UN Convention on the Rights of Persons with Disabilities. *Cambrian Law Review*, 40, 36-48.
- Lord, J. E., and Stein, M. A. (2009). Social rights and relational value of the rights to participate in sport recreation, and play. *Boston University International Law Journal*, 27, 249-282.
- McArdle, D. (2006). Human rights and animal welfare: the implications of anti-hunting legislation in the United Kingdom. *ICSSPE Bulletin*, 48.
- Mushett, T., and Cody, A. (2011). Atlanta 1996: Trials and triumphs of the human spirit. In D. Legg and K. Gilbert (Eds.) *Paralympic legacies* (pp. 75-99). Champaign, IL.: Common Ground.

3.2. Reference Books, Encyclopaedias etc

- David, P. (2005). *Human rights in youth sport: A critical review of children's rights in competitive sports*. London: Routledge.
- Kidd, B. (2003). *Athletes and human rights*. Barcelona, Spain: Centre for Olympic Studies at the Autonomous University of Barcelona.
- McArdle, D., and Giulianotti, R. (Eds.) (2006). *Sport, civil liberties, and human rights*. London: Routledge.
- Sport for Development and Peace International Working Group. (2007). Literature reviews on Sport for Development and Peace. <http://iwg.sportanddev.org>
- Wolff, E., and Hums, M.A. (eds) (2007). Sport and human rights. International Council of Sport Science and Physical Education. *Bulletin Special Edition on Sport and Human Rights*, 48.
- Wolff, E.A., Hums, A., and Roy, E. (2007). Sport in the UN Convention on the Rights of Persons with Disabilities. Geneva, Switzerland: United Nations Office of Sport for Development and Peace.

3.3. Book Series

Not applicable.

3.4. Congress/Workshop Proceedings

How You Play the Game: The Contribution of Sport to the Promotion of Human Rights Conference 1999

www.hrca.org.au/wp.../sport-and-human-rights-conference-programme.pdf

North American Society for the Sociology of Sport Conference Abstracts 2005

<http://www.nasss.org/2005/2005abstracts.pdf>

Gilbert, K., and Petri-Uy, M. *Facing Reality: Resurrecting Disability Sport in Kosovo*

Hums, M.A., and Moorman, A.M. *Sport as a Human Right: Role of the Olympic Movement*

2006 – <http://www.nasss.org/2006/abstracts2oct06.rtf>

Corbett, D. *The Politics of Race and Sport in the Promotion of Human Rights*

Hargreaves, J. *Muslim Women in Sport: Islam, Agency, and Human Rights*

Roy, E., and Hums, M.A. *Advancing the Human Rights of People with Disabilities in Sport: Developing the International Disability in Sport Working Group*

Wolff, E.A. and Fay, T. *Rights from Wrongs: Applying Dershowitz in Sport*

2007 – <http://www.nasss.org/2007/2007finalProgram2.rtf>

Hartmann, D. and Isett, C. *Humanism Instead of Human Rights?: The Challenge of Beijing 2008 to Olympic Idealism*

Kaufman, P., Hums, M.A., and Wolff, E.A. *Introducing Sport and Human Rights in the Classroom*

Misener, L., and Mason, D. *Rethinking Sporting Events through the Lens of Community Development*

North American Society for Sport Management Conference 2007

Hums, M.A., and Moorman, A. M. Sport and Human Rights: Developments in the Human Rights Movement and Disability Sport Initiatives. http://www.nassm.com/files/conf_abstracts/2007_1572.pdf

Play the Game 2007

Hums, M.A. and Wolff, E.A. Promoting Human Rights through Sport: Can It Make a Difference?

<http://www.playthegame.org/upload/Billeder%202007%20konference/speakers/speakerdocuments/HumsMary.pdf>

European Association for Sport Management 2009

Hums, M.A., Wolff, E.A., Morris, H., Moorman, A.M., and Lyras, A. Monitoring human rights in sport: How a human rights in sport checklist can assist with best practices

North American Society for Sport Management 2010

Hums, M.A., and Wolf, E.A. Human Rights and the Olympic Movement: Another Pillar of Good Governance? http://www.nassm.com/files/conf_abstracts/2010-149.pdf

5th IWG World Conference on Women and Sport 2010

Mayanja, R. (2010). Women and girls' access to and participation in sport: A human rights issue. http://www.iwggiti.org/@Bin/23026/Keynote_Address_Rachel_Mayanja.pdf

3.5. Data Banks

Not applicable.

3.6. Internet Sources

- International Olympic Committee <http://www.olympic.org>
- International Olympic Academy <http://www.ioa.org.gr>
- International Paralympic Committee <http://www.paralympic.org>
- Amnesty International <http://www.amnesty.org>
- International Working Group on Women and Sport <http://www.iwg-gti.org/e/index.htm>
- United Nations Sport for Development and Peace <http://www.un.org/themes/sport>
- International Year for Sport and Physical Education <http://www.un.org/sport2005/index.html>
- Office of the United Nations High Commissioner for Human Rights <http://www.ohchr.org/english/bodies/>
- UNESCO – Sport http://portal.unesco.org/shs/en/ev.php-URL_ID=9534andURL_DO=DO_TOPICandURL_SECTION=201.html
- World Health Organisation <http://www.who.int>
- Council of Europe www.coe.int
- Convention on the Rights of the Child www.unicef.org/crc
- Convention on the Elimination of All Forms of Discrimination against Women <http://www.hrweb.org/legal/cdw.html>
- Convention on the Rights of Persons with Disabilities <http://www.un.org/disabilities/convention/conventionfull.shtml>
- Convention against Apartheid in Sports http://untreaty.un.org/unts/60001_120000/24/27/00047307.pdf
- <http://www.unhchr.ch/html/menu3/b/12.htm>
- Human Rights Yes <http://www1.umn.edu/humanrts/edumat/hreduseries/TB6/>
- Compass – Sport http://www.eycb.coe.int/Compass/en/chapter_5/5_15.html

4. Appendix Materials

4.1. Terminology

- Sport: in the context of human rights, sport is defined to include recreation, leisure, physical activity and play
- Human rights: fundamental rights that belong to everyone in our global society
- Sport as a human right: the recognition that the practice of sport is a human right
- Sport as a platform for human rights: sport activities can serve as a vehicle for the promotion of human rights, peace and development.

4.2. Position Statements

- Brighton Declaration on Women and Sport http://www.iwg-gti.org/@Bin/22427/Brighton_Declaration_e.pdf
- International Paralympic Committee Position Statement on Human Rights http://www.paralympic.org/release/Main_Sections_Menu/Development/Development_Programmes/Symposium/3.9_Position_Statement_on_Human_Rights_Attachment_revised.pdf
- Magglingen Declaration <http://www.ilo.org/public/english/universitas/download/events/maggldecl.pdf>
- Accra Call for Action on Sport for Development and Peace http://www.icsspe.org/index_ea0c1db4.php.html

Free Statement

The Sport and Society Fellowship recognises Brown University undergraduates who have a record of excellence in academics and sport. The programme supports innovative research or applied projects, exploring the intersection of sport and human rights within a particular context. There currently is a network of university faculty focusing on sport in Human Rights. The universities involved include faculty from Brown University, Havergal College, Sterling University, the University of Louisville, the University of Toronto, California State University – Northridge, American University, and Loughborough University.

Brown University Royce Fellowship for Sport and Society

http://www.brown.edu/Administration/Dean_of_the_College/fellowships/awards/info/royce

Moving this important field forward requires a universal acknowledgement and buy-in of the field as relevant and worthwhile. This entails (a) the recognition of current practices as significant to human rights work both on a micro and macro level, (b) the translation of policy into support of practice, both directly and through response to human rights violations when they occur, (c) advanced qualitative measurements of the effectiveness and awareness of human rights and sport policies, and (d) a more advanced framework for educating global citizens about the essential intersection of sport and human rights.

SPORT INFORMATION

Chris Gould, Hartmut Sandner and Gretchen Ghent

1. General Information

1.1. Historical Development

The development of sport information and documentation services parallels that of the larger world of information science, documentation and information management as advocated, standardized and promoted by the International Federation of Library Associations and Institutions (IFLA) <www.ifla.org>, the International Organisation for Standardization (ISO) <www.iso.ch>, national library associations and more specifically, the International Association for Sport Information (IASI) <www.iasi.org>. Sport documentation centres/libraries or academic sport sciences collections originated at universities, colleges and institutes where information resources were needed to support physical education and sport sciences programmes and research. Government-supported sport documentation centres later provided resources for coaches, sport administrators, athletes, the media and sport sciences researchers. Such centres hold physical and electronic collections of sport information resources in many formats, managed to optimize discovery and delivery. It may provide tiered levels of client access and service.

Modern sport information libraries/libraries have important virtual presences through adopting online technologies. The overall result is enhanced, unmediated access to sport information for users; from casual enquirers to serious researchers. There is a continuing but changing role for sport information and documentation services as they provide managed access to curated collections of selected and evaluated resources.

The final developmental concern is the mission and scope of sport information centres. There has long been heavy demand for sport science research concerning all aspects of high performance and competitive sport; this is reflected in the collections and service offerings of many sport information centres. Governments are increasingly seeking to use the potential of sport and physical activity to achieve objectives in diverse areas like health, social cohesion, community development and so on. Thus there is increasing demand for research from the social sciences to further develop the evidence base for policy development and provide models of best practice for programmes and initiatives. Consequently there have been developments toward national and international centres (clearing-houses) whose activities include locating, acquiring, evaluating and collating research (often unpublished) relating to all fields of sport, physical activity and active recreation – ‘sport for all’. A clearing house may be an expansion of the activity of a centre or institution, which previously had a stronger focus on elite sport and elite sport research. Nevertheless, there remain instances of the elite sport information centre dedicated to support high performance sport.

1.2. Function

The functions of sport information and documentation services are:

- To identify and organise sources of information and resources pertinent to the needs of sport information users, expressed or latent
- To facilitate access and delivery of that information in the users' preferred format
- To actively promote and disseminate the availability of information on sport and related disciplines
- To provide technical advice on information management to practitioners creating or managing data or content in other sport-related disciplines
- To promote national and international cooperation in the field of sport information.

1.3. Body of Knowledge

Sport information and documentation services draws from a variety of scientific disciplines, including: library science, technology and software engineering, sport sciences, pedagogy and education, psychology, sociology, biology, medicine and biomechanics. This includes multi format information, data, published and unpublished documents, physical and digital sources of information and knowledge, from both theoretical and applied domains. Emerging information services (e.g. Twitter, blogs) represent new information sources and documentation challenges.

The current sports information professional, documentalist or librarian's body of knowledge consists of an understanding of how the world's knowledge has been organised to date. It must include awareness of the major trends in both the sport sector and the information industry, which drive change in objectives and practice. The professional knows how to manage all forms of information, to enhance discovery, and access and comply with the relevant provisions of copyright law and licensing conditions.

Knowledge of the information-seeking behaviours and preferences of users, and of applications for information and communications technologies (ICT) is essential. Sport information specialty areas include: cataloguing, indexing, metadata and collection development, applications and systems management, electronic resources and/or rights management, reference librarianship and research analysis.

Conceptual and practical understanding of bibliographical description including record structures, e.g. MARC (MACHine Readable Cataloguing) and the database field structure is necessary, even if library and database software semi-automates the data entry for registration, representation, cataloguing, classification and indexing processes. Some knowledge of various classification systems, e.g. Universal Decimal System, Dewey Decimal System or Library of Congress Classification, is needed to manage physical collections while electronic resources require a working knowledge of web technologies. The modern sports information professional must also have an understanding of search engines and be a proficient 'searcher' in order to provide a service as a consultant and analyst. Also

necessary is an understanding of the use of metadata to achieve information discovery and deliver varying levels of access. Furthermore, management and administrative expertise, facilitates planning, organisation and delivery of library and documentation services, alongside computer systems and technology for internal (intranet) and external (internet) website content. Thus, the skills and knowledge of how to train and educate staff and users of library services and the expertise to promote sport information resources and services to clients are essential.

1.4. Methodology

In the early years of sport documentation work, focus was on the creation of thesauri, applying logic and specificity to the study of the hierarchical and inter-relational structure of sport terminology. The goal was to agree on a uniform specialized dialect. This early work provided the foundation for the building of databases, describing documents and promoting good storage and retrieval practices. Much of this work was done by IASI pioneers Josef Recla, Karl Ringli, Robert Timmer, Siegfried Lachenicht and Gilles Chiasson. Their work resulted in the *Sport Thesaurus* (2002). Its controlled vocabulary and sport subject codes provided indexing terms for librarians creating records for databases such as SPORTDiscus, Sportscan and library catalogues like that of the Australian Sports Commission's National Sport Information Centre (NSIC). Other examples of databases of indexed sport information are the comprehensive German SPOLIT and SPOFOR sport scientific databases. As the scientific disciplines connected with sports and sport in general are constantly evolving, there is an ongoing need for updated vocabulary reflecting the actual state of knowledge. Recent technology developments have enabled sport information specialists to implement vocabulary updates, adding new terms to identify new concepts. New options are available to enhance retrieval: shared metadata standards or mapping tools enable simultaneous searching of different databases or catalogues with one search or enhance the result of retrievals, e.g. the *Virtual Library of Sport Science* <www.vifasport.de> which searches five German collections. It is also possible for information seekers to tag search results using terms meaningful to them, e.g. rowing, biomechanics, GPS and so on.

Information-science research methods, also known as informetrics, have applications within the sport information domain. One key area is information retrieval, with its measures of recall and precision for effectiveness of catalogue and database searching; it also includes study of user behaviours when searching. Bibliometric research measures patterns of publication and can be used to establish the key authors or core journals in a given field. Its methods include citation analysis and content analysis, which can measure journal article impact factor; text mining is another application. Informetrics uses data collection and reporting applications, which can inform collection development decisions in libraries: it yields resource usage statistics on usage by clients, data about article views and downloads for electronic journal and e-book titles, database and catalogue searches and circulation. Web analytics give data about web page visits, keyword searches, hyperlinks on sport information websites and can be used to improve the site for users.

Applied methodologies may come from other disciplines such as psychology e.g. user behaviour, or social sciences for qualitative research e.g. client satisfaction surveys.

1.5. Relationship to Practice

Access to sport information services or resources may no longer involve a library visit. Due to the quantity of sport information that is freely available via the internet, libraries and sport information centres in their physical or virtual forms are no longer an automatic destination for clients. Library and information centre metrics confirm declining gate count figures and usage of print collections, even though they hold potentially valuable information. Similarly, usage of sports video collections has been impacted by the availability of footage online. Thus many libraries and information centres have reconfigured their physical spaces. Print collections are being de-emphasized by weeding and by moving all but core materials off-site. Sport information professionals are now acquiring access to, managing, and often digitizing content, rather than building and managing owned collections of resources, thus enabling direct online content access for clients at their desktops or in the field is a key task. It requires a high level of proficiency in ICT and expertise in deploying and integrating systems or working with ICT departments.

Rapid development in ICT technologies has brought improvement and efficiencies to all aspects of sport information management and access. Examples are web-accessible catalogue interfaces (OPACs), sophisticated platforms for managed virtual collections of books, journals, images, video footage and digital media resources. They increasingly cater for the user preference toward information in electronic formats and remote 24/7 access. Similarly, modern library and business software has streamlined the administrative and technical aspects of sport information and documentation. For the sport information consumer, a greatly improved user experience is achieved through hardware developments such as increased data storage capacity, faster processing speeds and improved software interfaces to traditional tools like catalogues and databases. The modern sport information seeker may actively create and distribute new sport information, often in the form of digital media resources. Current innovations use social media to enhance sport information centre offerings and responding to the emergence of new mobile devices as user access points.

Video footage is of such importance to sport scientists, athletes and coaches, that its management warrants special mention. Video of competitions and training is a key resource for match and technique analysis for improved performance. The sport information specialist deals with issues like changing formats (e.g. VHS to DVD to Blue Ray and streaming video) and complex rights management arrangements. As with books and journals, there is strong user preference for online access available 24/7. Two sport information centres use contrasting approaches. The National Sport Information Centre (NSIC) implemented a commercially available system (Media Beacon) for its Sport Performance Information and Digital Asset Repository (SPIDAR), a comprehensive digital asset management facility,

accommodating digital media and performance analysis assets for coaches, sport scientists and athletes. SPIDAR assets may comprise any or all categories of digital material including photographic and medical images, video and audio recordings, electronic documents, and other new media assets. However, the Sport Movement Archive Requesting Technology (SMART) system is an in-house solution developed by software engineers at the Department of Sports Information in the Japan Institute of Sports Science (JISS) to handle and deliver its video collection to clients. The role of the sport information specialist is to adapt traditional indexing and cataloguing practice to develop the metadata which underpins search and access functions.

The decline in library visiting requires sport information professionals and centres to develop and apply effective push-services for actively forwarding new information, knowledge and records to potential clients. To avoid information overload, alerting services must be tailored to individual client information needs and use the latest developments in information and communication technology, based on 24/7 electronic access to quality controlled information. Clients can be offered tools to participate actively in collecting and indexing relevant information and knowledge.

Changes in the publishing industry have also affected professional practice. Journal database records are often sourced from publishers and enhanced catalogue records may be imported from bibliographic databases: both reduce the need for original records created by librarians. The labour-intensive tasks of extensive manual indexing and high-level cataloguing can be redirected without greatly affecting the experience of the non-specialist user who can still achieve effective searching of enriched catalogue and database records using natural language keywords. Information professionals' expertise in exploiting the structure of catalogue and database records is still available for specialist searching as required.

Improved client information literacy skill levels and this expectation of unmediated information access have resulted in a changing role for sport information professionals. Calls for assistance with routine searching and locating resources are diminishing. Yet communication with the clients in sport science and sport practice has become closer and more intense with requests made becoming more individualized. Traditional library skills of subject knowledge and analysis remain necessary to locate hard-to-find sport information or develop effective strategies to search for novel topics.

Information professionals' skills can be deployed to create or add value in other ways, such as optimizing sport and other content for discovery by developing functional information architecture and good quality metadata. Such skills readily transfer to in-house projects such as: digital archives, unique databases, intranet and website design. In the domain of sport information some of these high-value projects may not be publicly accessible, to preserve competitive advantage.

Sport subject knowledge, conceptual analysis and knowledge of client needs underpin these special subject portals:

- *Value of Sport Monitor* <http://www.sportengland.org/research/value_of_sport_monitor.aspx> (a joint Sport England, UK Sport, Australian Sports Commission initiative)
- *Clearinghouse for Sport* project <<https://secure.ausport.gov.au/clearinghouse/about>> (the National Sport Information Centre)
- *Virtual Library of Sport Science* <www.vifasport.de> with five collaborating German institutions.

Sport information specialists are also involved in creating and disseminating content, such as: user guides, topical research summaries and evaluations of sport-related information.

Sport information professionals work with clients of divergent educational, technical, and professional backgrounds. Knowledge of these clients and their sport information needs informs information professional's decisions in identifying, acquiring and making accessible resource tools of all levels of complexity and scope.

1.6. Future Perspectives

The number of organisations offering sport information (scientific, statistical, biographical, historical, market research, video) has grown during the last decade and will continue to do so. It includes sporting organisations, academic or educational institutions, government departments, commercial firms and individuals. Sport information and documentation managers must maintain awareness of sources and trends, evaluating the quality and authority of the information and devising ways to lever it for the benefit of their organisations. They can create and develop new high-value information and systems for internal use, their national clientele or a global audience. They can provide advice to their clients on matters concerning the management of sport information they produce – preserving data sets, using metadata for functionality, intellectual property issues and so on.

Websites will remain a powerful promotional and educational tool for sport organisations and researchers. Nevertheless, presentation of content will become increasingly dynamic and customized. Intelligent search engines and software applications (apps) can incorporate data from users' profiles, location and previous searches to refine queries or presentation of result sets and are already common in retail applications. They can be expected to become a feature of the user interfaces used by searchers for sport information. This will create a dynamic and customized user experience, one which is increasingly likely to be via a mobile device. Social software and mobile devices already enable users to create, share, adapt, rearrange and add to the body of knowledge. Information professionals must scan this environment for content of value and consider the potential of using these platforms to deliver sport information content and services to clients.

Public websites of libraries, information centres, databases or publishing houses will continue to be useful tools for presenting information to the general user. Sophisticated searching machines will cover all of them to a better degree, giving better access to the 'deep web'. Other valuable web sources such as Wikipedia can be updated and improved by sport information professionals.

However, premium content with added values will not be visible to the same degree, as sport information professionals focus their efforts on creating and delivering high-value products and services to internal or/and commercial clients using intranets and extranets. Already, national and international sport organisations are integrating systems and applications to combine bibliographic information from one of the major databases as *SPORTDiscus* or *SPONET* with video and other audiovisual material or full-text content and delivering it to users' workstations and or remote locations. Further integrations to augment current sport information resources can be expected to create value-added products for users.

Gaining access to quality sport information will continue to be a major issue, as rights owners seek to maximize return on the content they own by imposing restrictive licensing conditions. In the sport information domain, this has particular application to sports video content. Negotiating with broadcasters and event owners and managing access conditions for users, already a complex issue for sport information centres, will become more so as more sport coverage is delivered online. Publishers can be expected to continue to lever demand by researchers for the most current content as well as their need to publish research findings. E-books can be expected to find increasing user acceptance as competing formats and licensing models stabilize.

However the development of open access content continues to make access to scientific and other sport information and knowledge possible for a great variety of clients. Open access publishing models have encouraged publishers to make significant sport journal content freely available, immediately or after an embargo period. Full-text, open access archives of scientific theses which libraries around the globe have developed demonstrate that trend.

References

Not applicable.

2. Organisational Networks

2.1. Major International Organisations and Networks

The International Association of Sport Information (IASI) is the leading international organisation with a focus on the delivery of sport information, bringing together experts in sport information and communication. Its members are based in national and international sport and sport science organisations and institutions, focusing on quality assured information and knowledge transfer to sport practice. Currently, they have a substantial focus on support of high performance sport, with close connections with their National Olympic Committee and coaches in junior and senior elite sport.

IASI was restructured during the last two years to provide a global forum for the development of

modern sports information practice. The organisation seeks close cooperation with leading national and international sport and sport scientific organisations. IASI is an advocate for the use and development of sport information services and needs to decide on its future.

The International Olympic Committee (IOC) Library offers a vast collection on Olympic sports and sports sciences as well as access to the official publications of the Olympic Movement. It makes its reference collection to researchers from across the world and is open, free of charge, to any interested person, whether local or international.

<http://www.olympic.org/library>

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

2.2.1. Regional Organisations

Australia-Oceania

The Australian Sport Information Network (AUSPIN) comprises sports information providers and professionals representing both government and private sectors across Australia and the Asia/Pacific region. AUSPIN members cooperate by sharing expertise, information and experiences to facilitate access to sport information and knowledge resources within their respective states, territories, and national and international jurisdictions. One initiative has been the development of a consortium of some members to achieve improved sport information delivery to their clients; and the creation of a union catalogue is a projected activity.

< <http://www.ausport.gov.au/information/nsic/memberships#AUSPIN> >

Germany, Austria, Switzerland

The Working Group of German Speaking Sport Scientific Libraries is a committee of the German Association of Sport Science, bringing together representatives of about 70 libraries from Germany, Austria and Switzerland. The librarians meet each year to discuss recent developments and the state of sport libraries in their countries. < <http://www.agsb.de> >

Nordic countries – NORSIB

The Nordic Committee for Sport Libraries (NORSIB) is a cooperative body for libraries and information centres at sport colleges and sport federations, and other sport libraries in the Nordic countries. There are 15 member organisations from Denmark, Finland, Iceland, Norway and Sweden. NORSIB has its general assembly at least every other year. The meeting circulates between the Nordic countries. < <http://jyk.jyu.fi/showpage.php?lang=finandkeyword=norsib-frontpage> >.

2.2.2. National Organisations

Australia

National Sport Information Centre / Clearinghouse for Sport

Sport Leadership Division

Australian Sports Commission

Leverrier Cres, Bruce ACT 2617

PO Box 176, Belconnen ACT 2616

Australia

The National Sport Information Centre (NSIC) provides a gateway to sport related information services and resources supporting the needs of the Australian Sports Commission (ASC) and Australian sports community including the Australian Institute of Sport. The NSIC is Australia's premier information resource centre for sport and is highly regarded throughout the world. The Clearinghouse for Sport is a new Australian sport sector information and knowledge sharing initiative.

Melbourne Cricket Club Library

PO Box 175,

East Melbourne,

Victoria, Australia, 8002

<http://www.mcc.org.au/About%20the%20MCC/Heritage/MCC%20Library.aspx>

A facility for reference and research, located at the Melbourne Cricket Ground, the MCC Library acts as a major national and international repository for information on sport and sports history. The collection has particular strengths in cricket, Australian Rules football and Olympic Games with substantial holdings in several other sports.

Canada

Sport Information Resource Centre (SIRC) Ottawa

180 Elgin Street, Suite 1400

Ottawa, Ontario

Canada

K2P 2K3

<http://www.sirc.ca>

The Sport Information Resource Centre (SIRC) is a not-for-profit amateur sport organisation with the mandate to provide information and serve the educational needs of organisations and individuals involved in, or responsible for the development of, sport and fitness in Canada and around the world. Its mission is to enhance the education of all Canadian and International organisations and individuals involved in sport and fitness through quality information and learning services.

China

China Sport Information Center Beijing

11 Tiyyuguan Road

Chongwen District

Beijing 100061

P.R. China

England

Kenneth Ritchie Wimbledon Library, the Wimbledon Lawn Tennis Museum

All England Lawn Tennis and Croquet Club

Church Road

Wimbledon

London SW19 5AE

<http://www.wimbledon.com/visiting/museum/library>

The vast range of subject matter at the Kenneth Ritchie Library is available to the general public upon request, for study and research.

Finland

Research Institute for Olympic Sports (KIHU) Jyväskylä

Rautpohjankatu 6

40700 Jyväskylä

Finland

<http://www.kihu.fi/english/>

KIHU is a nationally and internationally respected, customer-oriented inter-disciplinary research, development and service organisation for elite sports. KIHU is also a preferred partner in joint projects with various interest groups, functioning to create opportunities for successful elite sports in Finland. KIHU's role is to conduct research in Olympic sports and apply the research results to practical coaching and coaches' education. KIHU's mission is to help secure the future of elite sports in Finland.

France

Institut National du Sport, de l'Expertise et de la Performance (INSEP) Paris

11 Avenue du Tremblay

Paris, France

[http:// www.insep.fr/](http://www.insep.fr/)

Germany

German Sport University Cologne with Central Library of Sport Science

Zentralbibliothek der Sportwissenschaften der Deutschen Sporthochschule Köln

Am Sportpark Müngersdorf 6

50933 Köln

<http://www.zbsport.de>

The Central Library of Sport Sciences at the German Sport University houses one of the most comprehensive book collections in sport and sport sciences. It serves the students and scholars at their university as well as the German sport scientific community. It is supported by the German Science Foundation as its specialized library in sport science. It also manages the German virtual library of sport science.

Federal Institute of Sport Science (BISp) Bonn

Graurheindorfer Straße 198 (Haus 7)

D- 53117 Bonn

Email: info@bisp.de

<http://www.bisp.de>

The BISp manages three different sport and sport scientific open access databases, offered free of charge. SPOLIT is the most comprehensive sport scientific database in Germany; SPOFOR assembles information on sport scientific research projects in Germany, Austria and Switzerland, and offers information on multimedia products in the field of sport. The databases can be accessed via www.bisp-datenbanken.de

Institute for Applied Training Science (IAT) Leipzig

Department Information Communication Sport

Marschnerstr. 29

D-04105 Leipzig

sponet@iat.uni-leipzig.de

<http://www.sport-iat.de>

The Department Information Communication Sport offers two major databases: SPONET is an internet based sport scientific database in the field of training and training science in junior and senior elite sport (with about 25.000 items); and SPOWIS is the former GDR sport sciences database, begun in 1971 and terminated in 1994. It has about 120,000 items. In addition the department offers the full text databases for the journals *Leistungssport* (elite sport), *Journal of applied training science* and the former GDR sport scientific journal in elite sport *Theory and practice in elite sport*. Finally an individualized information service (SPRINT) has been developed which is based on the database SPONET.

Oceania

Oceania Sport Information Centre

The Library

The University of the South Pacific Laucala Campus,
Suva, Fiji

Tel.: +679 323 1000

Fax: +679 323 1528

Email: library@usp.ac.fj

http://www.sportingpulse.com/assoc_page.cgi?c=2-4733-0-0&andID=72231

The Oceania Sport Information Centre was established in 1997, as a joint project of the International Olympic Committee (IOC), Oceania National Olympic Committee (ONOC), the Australian Sport Commission, UNESCO and the University of the South Pacific (USP). The Centre aims to collect, manage and disseminate information in the field of sport and physical education for the region.

Switzerland

Eidgenössische Hochschule für Sport Magglingen E(HSM)

Bundesamt für Sport BASPO

Eidgenössische Hochschule für Sport Magglingen EHSM – Library

CH-2532 Magglingen

Switzerland

Email: ehsm@baspo.admin.ch

United States

The Amateur Athletic Foundation of Los Angeles (AAFLA)

2141 W. Adams Blvd.

Los Angeles, CA 90018

USA

e-mail: info@LA84foundation.org

<http://www.la84foundation.org>

The LA84 Foundation is endowed with surplus funds from the 1984 Los Angeles Olympic Games. Its mission is to serve youth through sport and to increase knowledge of sport and its impact on people's lives. The LA84 Foundation has undertaken an ambitious project to convert portions of its traditional library collection to digital format. Digital resources include academic journals, scholarly books, popular sports magazines of the late 19th and early 20th centuries, and an extensive offering of Olympic publications. The Olympic titles include a complete run of back issues of Olympic Review, the official publication of the International Olympic Committee, and two dozen Olympic Games official reports. All of the digital publications are available at no cost to website visitors. The LA84 Foundation Search page provides full-text access to all digital documents and shows a complete list of titles.

Henning Library and Archive, International Swimming Hall of Fame
One Hall of Fame Drive
Ft. Lauderdale, FL
USA

http://www.ishof.org/library/henning_library.htm

The Institution's mission is 'to develop the extensive library and archival resources that will improve the body of aquatic sports knowledge and to provide the informational services that will inspire the enrichment of individual understanding'. The library and archival facility gathers, preserves and makes available an extensive collection of resources through a worldwide research system.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

There are no journals dealing exclusively with sport information. Examples of key publications for the information professional are listed below:

Ariadne : Library and Information Science Journal

< <http://www.ariadne.ac.uk/> >

published by UKOLN (UK) <http://www.ukoln.ac.uk/>

Computers in Libraries

< <http://www.infotoday.com/cilmag/default.shtml> >

published by Information Today (US) <http://www.infotoday.com/>

Information Research : an International Electronic Journal

< <http://informationr.net/ir/index.html> >

privately published by Prof. T. D. Wilson and hosted by Lund University Libraries, Sweden.

Journal of Digital Information

< <http://www.dirf.org/jdim/> >

open access peer-reviewed journal sponsored by the Digital Information Research Foundation

Journal of Information Science

< <http://jis.sagepub.com/> >

published by Sage UK

Library Hi-Tech

< <http://www.emeraldinsight.com/journals.htm?issn=0737-8831> >

published by Emerald (UK).

3.2. Reference Books, Encyclopaedias, etc.

Not applicable.

3.3. Book Series

Not applicable.

3.4. Congress/Workshop Proceedings

The latest three International Association for Sports Information (IASI) Congress proceedings are:

- *Building and Sustaining Sport Information Communities – through connectivity, collaboration and sharing*: Proceedings of the 13th IASI World Congress, 11-13 March, 2009, Canberra, AIS, 2009
- *The Value of Sports Information: Toward Beijing 2008*: Proceedings of the 12th IASI World Congress, 19-21 May, 2005, Beijing, Beijing Sport University, 2005
- *Sports Information in the Third Millennium*: Proceedings of the 11th IASI World Congress, Lausanne, 25th – 27th April 2001, Lausanne: Olympic Museum and Studies Centre, 2001.

In 2011 an IASI Workshop on 'Information and communication in modern elite sport – topics, progress, challenges' was arranged in Leipzig (Germany) between June 28-30 by the Institute for Applied Training Science (IAT). Workshop proceedings are available from host institute with sponet@iat.uni-leipzig.de

3.5. Data Banks

The following public institutions offer the most comprehensive sport scientific databases to their clients:

- The Amateur Athletic Foundation of Los Angeles (AAFLA) with its full-text digital archives of the official Olympic reports as well as of several sport scientific journals (http://www.la84foundation.org/5va/over_frmst.htm)

- The German Federal Institute of Sport Science (BISp) in Bonn with its databases SPOLIT, SPOFOR and SPOMEDIA
(<http://www.bisp-datenbanken.de>)
- The German Sport University Cologne with its Central Library of Sport Sciences as the coordinating body for five German sport scientific institutions and their electronic databases and library catalogues in sport and sport science which are assembled in the Virtual Library of Sport Science (www.vifasport.de)
- The Institute for Applied Training Science (IAT) in Leipzig (Germany) with several open access databases on publications in the field of junior and senior elite sport and corresponding scientific research (SPOWIS, SPONET) as well as with full-text digital archives of three elite sport research journals (J. Elite Sport, J. Appl. Training Sci., Theor. Pract. Elite Sport)
(<http://www.iat.uni-leipzig.de/service/datenbanken>)
- The Institut National du Sport, de l'Expertise et de la Performance (INSEP) in Paris (France) with its sport scientific documentation platform SportDocs
(<http://www.sportdocs.insep.fr>) and the HERACLES database
- The National Sport Information Centre of the Australian Sport Commission (ASC) in Canberra with the sport scientific database SportScan
(<http://www.ausport.gov.au/information/nsic/catalogue>). Note that updating of this database ceased in May 2011
- The Research Institute for Olympic Sports (KIHU) and the Department of Biology of Physical Activity at the University of Jyväskylä (Finland) with the National Sport Research Database of Finland
(<http://www.urheilututkimukset.fi/web/etusivu/>)
- SPARC (Sport and Recreation New Zealand) has developed an International Content Partnership project in high performance sport as 'a site for sharing knowledge, learn faster and to win in international high performance sport.'
(<http://www.hpsport.com>)
- Among the commercial databases in the field of sport science the most comprehensive is EBSCO's SportDiscus, covering all aspects of sport, sport science, physical education etc., and includes records for journal articles, conference papers, monographs including book chapters and theses. It is available with several options including one offering extensive full-text access.
(<http://www.ebscohost.com/public/sportdiscus>)

3.6. Internet Sources

Not applicable.

4. Appendix Materials

Not applicable.

SPORT AND TALENT

David Morley and Richard Bailey

1. General Information

1.1. Historical Development

Talent development has evolved over decades, primarily informed by research from a range of disciplines to shape bio-psycho-social perspectives of athletes' performances in sport. Whilst the aims of talent development have remained broadly the same – identifying and supporting talented players with the intention of increasing their chances of success – the methods employed have evolved considerably over the years. Some systems, such as those of the former Eastern Bloc states and China, have been able to provide highly structured environments supported by intense physiological and psychological training and testing. Others have been forced to adopt a more laissez-faire approach, in which the talented are assumed to rise to the top. For all of their differences, there are some perennial themes that run throughout almost all discussions: is talent the result of innate dispositions or particular experiences? Biological determinism or environmental determinism? To what extent does early high ability track to adult elite sport performance? How do coaches' views of talent influence their judgements and practices? Which aspects of a player's development are of greatest importance in the realisation of their ability?

Historically, the discipline that has provided the most substantial body of research evidence is sports psychology. Bloom's (1985) influential study of talented performers across a range of skill domains (chess, music, tennis) illustrated the critical function of wider psychosocial and environmental factors on the performer, such as education, family and peers. Ericsson's (1996) seminal research on 'expertise theory' inspired a whole raft of applied research exploring the role of deliberate practice in the development of expert performance. More recently, philosophical debates have emerged around the 'luck' factor and the role and ethics of genes in determining the future success of athletes. To date, this interactionist perspective of talent in sport has enriched the understanding of talent in sport and it has been generally acknowledged across disciplines as the most meaningful and appropriate mode of research for understanding more about the most effective means of supporting talented athletes.

Research into talent development and expertise has recently stimulated a number of publications aimed at wider audiences (e.g., Dweck, 2006; Gladwell, 2008; Shenk, 2007; Syed, 2010). Generally speaking, these books focus on the psychology of performance and could therefore be said to offer only a partial picture. However, there is no doubt that this style of writing on talent development has contributed to raising the general public's awareness of some of the issues surrounding talent development in sport.

1.2. Function

Talent development in sport is an area of study that aims to draw together the findings of a variety of disciplines in order to maximise an athlete's performance effectively within sport. These findings inform the modelling of the athlete's experience, which considers the appropriateness of practices at the various developmental stages of athletes in their chosen sport, or sports.

1.3. Body of Knowledge

Talent development is fundamentally concerned with strategies and practices aimed at the maximisation of an athlete's performance. Whatever interpretation is adopted, it is clear that talent development draws on the full range of sports sciences. Recent years have witnessed the emergence of a number of influential 'models' that have tried to make sense of these disparate bodies of knowledge. Within these models an emphasis is often placed upon the perceived requirements for core competencies or dispositions of expert athletes and how these need to be developed in relation to a constantly changing set of environmental factors in a range of contexts.

The modelling of talent development in sport has accelerated rapidly over the past decade (Stambulova, 1994; Abbott and Collins, 2004; Bailey and Morley, 2006; Côté, 1999; Durand-Bush and Salmela, 2002; Morgan and Giacobbi, 2006), with citational analysis being performed to illustrate the most commonly used models for research in this area (Bruner, Erickson, McFadden and Côté, 2009). Models vary widely and are constructed around a range of disciplines and perspectives. For example, Balyi and Hamilton's (2004) model of Long-Term Athlete Development relies heavily on physiological perspectives associated with adolescent growth. Bailey and Morley's (2006) talent development model proposes a multi-dimensionality to talent as a result of drawing upon psychological theories of giftedness, particularly derived from educational settings.

Multiplicative models of talent development, that recognise the complexity of the athletes themselves and the context in which they exist, extol the virtue of a Dynamic Systems Theory. Such models also counteract the failings of uni-dimensional, typically physiologically-biased approaches; and more effectively represent the fluidity of talent in sport (Simonton, 1999). Although there is an emphasis on performance as an outcome of the implementation of these models, there is also recognition of the interdependency of participation and performance in many models. This interdependency is often presented as a pyramidal construct and is often used internationally as a system of identifying and developing talented athletes (Kirk, Brettschneider and Auld, 2007).

Researching talent development in sport has led to the emergence of a range of contested views of the most appropriate practices for the field. For example, the use of physiological attributes to predict talent in young athletes has been used within talent development systems internationally, but is widely criticised for lack of recognition of biological age differences in children (Till et al., 2010). The exploration of biological age differences has also given rise to the area of research concerned with

identifying selection bias for talented children, termed 'Relative Age Effect', in which relatively older children within an age banding are over represented in elite sports participation (Thompson, Bamsley and Stebelsky, 1991; Cobley, Baker, Wattie and McKenna, 2009; Schorer et al., 2009; Loffing, Schorer and Cobley, 2010). Whilst a number of reviews have suggested flaws in talent development systems in sport, it is noticeable that national sport federations around the world continue to invest substantial resources into their implementation and maintenance (Baker and Schorer, 2010). The overreliance on current performance, at the expense of the detection of potential, as a predictor of talent is evidenced in many academic reviews of talent and participant development in sport over the past two decades (Abbott, Collins, Martindale and Sowerby, 2002; Régnier, Salmela and Russell, 1993; Morley and Bailey, 2011).

Another relatively recent development in sports talent research is the ethical perspective on the use of genetics in predicting talented performers (Rankinen et al., 2002; Miah, 2004; Miah and Rich, 2006; Wackerhage et al., 2009; Camporesi and Maugeri, 2011).

1.4. Methodology

The evolution of methodology related to talent development in sport has, due to its perceived link, tracked the same path as debates around nature versus nurture and the perceived correlates of success. Research initially revolved around anthropometric and physiological measurements of athletes and their relationship to athletic success; and comparisons were primarily drawn from elite and sub-elite athletes. Similar research methods have unfortunately been transferred to talent identification of junior athletes, occasionally within national initiatives (e.g., Australia's Talent search, Hoare, 1995) as part of talent identification procedures. This is inappropriate because this has ignored the influence of the instability of these indicators during growth spurts and hormonal changes experienced during puberty and adolescence in general (Borms, 1994; Ford et al., 2011).

Psychological determinants of success have often been researched through the compilation and subsequent validation of inventories of psychological traits related to elite levels of performance (Orlick, 2000; Bompa, 1999) and psychosocial competencies required to succeed with children, through comparing the competencies of elite and sub-elite athletes (Holt and Morley, 2004). More recently, it has been suggested that determinants of physical characteristics of fundamental movement skills are related to future athletic success and these characteristics have been researched through the use of inventories of movement assessments (Ulrich, 1998; Gallahue and Cleland-Donnelly, 2003).

Research has since emerged that has explored the environment that needs to be established to support talented individuals in sport effectively (Martindale et al., 2010). Within this field of study, retrospective recall of athletes and the use and subsequent analysis of their training diaries has provided evidence to establish the patterns of development experienced by athletes at a range of different developmental stages in sport. Although the longitudinal, systematic, analysis of talented

performers is recognised as the 'gold standard' of research approaches, very few studies of this kind exist, to date.

1.5. Relationship to Practice

The study of talent development in sport is essentially sports sciences applied to the specific contexts of selection and high performance, and so requires an understanding of a range of connected fields. Vocational opportunities for practitioners with this knowledge exist in careers for sports coaches, sports psychologists, biomechanists, researchers and sports administrators. Other chapters in this directory on Exercise, Health and Fitness and Sport Coaching provide more generic avenues into this type of related practice.

1.6. Future Perspectives

The dominant research within talent development in sport relates to maximising performance and is located within applied sport science. The modelling of talent development in sport has recently received much attention and it is likely that these models will continue to be validated and refined through the introduction of new data and conceptual frameworks. The interaction and importance of genetic and environmental factors in determining success will also continue to be important in the field as researchers seek to establish the correlates of success for athletes. It is envisaged that a collage of methods will be used to challenge this perspective and seek ways to support the talent development community in a balanced and holistic manner.

Genetic research will ultimately present the greatest philosophical debates within the talent in sport field and this will inevitably question the place of gene technology in determining athlete success. Some areas of research in this field, such as Relative Age Effect and the role of practice, as well as some of the more encompassing elements, such as modelling, are in their relative infancy. These areas of talent development in sport will need to be researched in more depth and within specific cultures in order to recognise their true impact on the development of talented athletes.

There has always been a shortage of longitudinal studies of talented athletes and consequently this limits the understanding of the various talent development models that have been proposed. Future research will search for answers around the efficacy of these models in providing appropriate platforms and pathways for athletic success across a range of contexts and cultures.

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2. Organisational Network

2.1. Major International Organisations and Networks

Until very recently, the academic locus of research into talent development has been general sports science bodies, such as:

- American College of Sports Medicine (ACSM) <http://www.acsm.org/>
- European College of Sport Science (ECSS) <http://www.ecss.mobi/>
- American Psychological Association (APA) <http://www.apa.org/about/division/div47.aspx>
- The British Association of Sport and Exercise Sciences (BASES) <http://www.bases.org.uk/>
- Other organisations have an interest in talent development, of which talent in sport is a feature:
- The International Research Association for Talent Development and Excellence (IRATDE) <http://www.iratde.org/>
- European Council for High Ability <http://www.echa.info/>

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

The main researchers into talent development are generally located within universities, such as:

Ericsson (United States)

<http://www.psy.fsu.edu/faculty/ericsson.dp.html>

Ericsson, K. A. (2007). Deliberate practice and the modifiability of body and mind: Toward a science of the structure and acquisition of expert and elite performance. *International Journal of Sport Psychology*, 38, 4-34.

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2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

- *High Ability Studies* (Routledge) provides a forum for scholars in a variety of disciplines associated with the development of human abilities to their highest level. It is a medium for the promotion of high ability, whether through the communication of scientific research, theory, or the exchange of practical experience and ideas. <http://www.echa.info/>
- The *Journal of Sport and Exercise Psychology* (Human Kinetics) is designed to stimulate and communicate research theory in all areas of sport and exercise psychology. <http://journals.humankinetics.com/jsep>
- *Medicine and Science in Sports and Exercise* features original investigations, clinical studies and comprehensive reviews on current topics in sports medicine and exercise science. <http://journals.lww.com/acsm-msse>

- *Talent Development and Excellence* is the official scholarly peer reviewed journal of the International Research Association for Talent Development and Excellence (IRATDE). The articles contain original research or theory on talent development, expertise, innovation or excellence. <http://www.iratde.org/>
- The *Sport Psychologist* is a scholarly refereed journal designed as a forum to stimulate thought and disseminate knowledge that focuses on the application and practice of sport psychology. <http://journals.humankinetics.com/tsp>
- The *Journal of Sports Sciences* (Taylor and Francis) publishes articles of a high standard on various aspects of the sports sciences, covering a number of disciplinary bases, including anatomy, biochemistry, biomechanics, psychology, sociology, as well as ergonomics, kinanthropometry and other inter-disciplinary perspectives. <http://www.tandf.co.uk/journals/titles/0264-0414.asp>
- The *Journal of Physical Education, Recreation and Dance* special edition. Identification and Development of Talent in Sport, *Talent Development and Excellence*, Vol. 2, No. 2, 2010, 119-121.

3.2. Reference Books, Encyclopaedias etc

- Baker, J., Cobley, S. and Schorer, J. (2011). *Talent Identification and Development in Sport: International Perspectives*. London: Routledge
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3.3. Book Series

Not applicable.

3.4. Congress/Workshop Proceedings

Not applicable.

3.5. Data Banks

Not applicable.

3.6. Internet Sources

Not applicable.

4. Appendix Materials

4.1. Terminology

- Talent – often used interchangeably to represent both the innate potential of the athlete and the outcome of the developmental process (Williams and Reilly, 2000)
- Talent detection – the discovery of potential performers who are currently not involved in the sport in question (Abbott et al., 2002; Williams and Reilly, 2000)
- Talent identification – the process of recognising current participants with the potential to become elite players (Williams and Reilly, 2000)
- Talent development – commences following appropriate talent identification and involves maximising the potential of all participants through the provision of a suitable learning environment (Williams and Reilly, 2000).

4.2. Position Statements

Refer to other chapters for specific guidelines on related areas.

SPORT FOR ALL

Wolfgang Baumann

1. General Information

1.1. Historical Development

Often in the shadow of the globalised, exclusive and standardised world of high performance sport, the Sport for All movement – as a rather young phenomenon – has made remarkable progress since its inception; it was first formulated in the resolution of the Council of Europe in 1963. It originally started as an idea without prestige and publicity, but today the term ‘Sport for All’ stands for an internationally accepted concept of proclaiming everybody’s right to access sport. Translated into all major languages of the world, Sport for All, with its origins in Europe, has reached most of the countries in the world within the last 50 years.

There have always been popular pastimes of sportive character throughout the history of mankind. Diem (1960) traces them back into the early cultures of the Babylonians (Egypt), Crete (Greece) as well as Persia, India and China and also reports about the cultic origin of sport in the Americas. Bogeng (1926) names and describes, among the sports of all times, the skills and exercises of the indigenous peoples of the continents. The variety and social role of popular play and sport activities in Europe, before the industrial era, has been collected and analysed by Mathys (1978), from the medieval age via the renaissance to the 19th century.

However, the complexity of different aspects of life has lifted basic leisure time pursuit to a new level of activity. Among these aspects of modern society were the growth of leisure time, the increased incidence of non-communicable diseases, the economic development and utilisation of sport as a countermeasure against civilization hazards. It was with this background that the term ‘Sport for All’ emerged to describe a new concept within the existing structure of national and international sport. Chronologically, the development of modern Sport for All, as a global movement, can be roughly divided in three major phases.

Pioneer Phase (1966 – 1985)

Originating in Europe, the notion of Sport for All was initiated by like-minded individuals who shared a common purpose, goals and vision. These pioneers met informally to share ideas and experiences. Amongst those pioneers, we can name Sport for All personalities like Jürgen Palm (Germany), Brian Dixon (Australia), Russ Kisby (Canada), Oscar Azuero (Colombia), Ju-Ho Chang (Korea), Lamartine Da Costa (Brazil) etc. The biannual Trim and Fitness Conferences that started in Oslo in 1969 served as a

first exchange platform for national Sport for All leaders and developed into an unofficial steering body of the international Sport for All movement. Held parallel, though with an earlier start, the International Council of Sport and Physical Education (now Sport Science and Physical Education – ICSSPE) have provided scientific support and cooperation since the first seminar in 1964 held in Cologne, followed by a series of conferences organised by the ICSSPE Sport and Leisure Committee.

Consolidation Phase (1986 – 1999)

The first International Sport for All Congress in Frankfurt (Germany), 1986, in collaboration with the IOC, was organised by the German Sport Federation (DSB). This marked the beginning of a new era, which was followed by the establishment of various coordinating bodies like the IOC Sport for All Commission and The Association For International Sport for All, TAFISA (formerly Trim and Fitness International Sport for All Association), as well as the launch of international Sport for All programmes like the Olympic Day Run (1987), World Walking Day (1991) and the World Challenge Day (1993). Sport for All expanded from Europe to the whole world with the founding of national Sport for All bodies in many countries, especially Asia and the Americas.

Globalisation Phase (2000 – the present)

With its growing and widespread acceptance, Sport for All has become increasingly globalised. This is, for example, reflected by the involvement of new stakeholders, the establishment of targeted alliances, the definition of new responsibilities, the creation of new structures and organisations, the launch of respective policy papers and surveys, and the launch of international congresses and conferences in the field of Sport for All. Indeed, there is now a global Sport for All Movement in existence, with specific characteristics, namely: new responsibilities, structures, organisations, programmes, semantics, policies and alliances.

Consequently, today, Sport for All has become formally recognised as an important task for the contemporary development of sport, as a counterbalance of elite sport and for the role of sport in changing societies. As a result of globalisation, Sport for All has reached a new significance in today's politics, public health, culture, community and economic development. The keyword in this development of Sport for All is 'change'. The last decade has experienced more new developments in the field of sport than ever before in modern history. A major part of this change has taken place in the area of Sport for All.

1.2. Function

The three words, 'Sport for All', describe a vision that portrays an ideal condition in the future; it implies that the given status of sport is seen as insufficient. However, over the last five decades, the concept of Sport for All has proven to be a vision with a considerable impact on sport in reality. In this context, Sport for All is viewed as a process of social change that, to a considerable extent, can be

planned and implemented on a large scale. The resulting vision has been, at least partly, realised by opening the selective elite sport system, which filters out the majority of sports people and focuses on a minority of the best athletes to changing sport into the integrative system Sport for All that is in principle accessible for everybody. Thus, the Sport for All movement is an intended deviation from the traditional sport system as it renounces some of its traditions to replace them with other ones that promote access of sport and physical activity for everybody. Sport for All is, therefore, understood as a modern response to the basic human right of exercise and play.

Under the name 'Sport for All', programmes are developed which give everybody access to sport, independent of competitive performance, economic status, or age. Inclusion, in contrast to competition, has been the key word for this movement. Sport systems thus responded to changes in contemporary life conditions. Worldwide, from developed to underdeveloped countries, sport has diverged into a new dimension of individual sports participation. Today, Sport is not yet for 'All', but it is for 'more' than ever.

There is general agreement, from a practical aspect, that even though interpretations have varied over the years and from country to country, Sport for All is, in principle, understood as the provision of opportunities to be physically active through sport in leisure time. It is participation oriented, accepts all levels of skill and performance, focuses on health and wellbeing, underlines the diversity of physical cultures and helps to rediscover the urban and rural living space as an environment for human activity. Generally speaking, and according to various international surveys, a majority of countries worldwide have now included Sport for All on their political agendas. It can be demonstrated, that on a national level, there has been an extension in diversity of programmes, events, and organisations, but there is also clear indication of prevailing inadequacies, namely: insufficient budgets, inadequate status and lack of facilities and personnel in Sport for All.

In conclusion, Sport for All cannot be defined as a sub-discipline to the traditional, top down dominated sport system, but must be positioned parallel with the sport system as the second main form in its own right.

1.3. Body of Knowledge

In dealing with the issue of knowledge, it needs to be clarified that for reasons of restricted space, this article predominantly deals with the global aspects of Sport for All and not as much with the national perspectives that may vary from country to country as reflected by various comparative surveys. Sport for All can be clearly described a universal phenomenon. Even though, from the author's view, it appears that scientific initiatives to study Sport for All in its own right on the international level have been rather scarce as well as being non-systematic nor comprehensive thus far. It can be said in principle, that the international Sport for All movement has grown more from practical approaches than from theoretical interpretations. Sport for All seems to appear not established as a scientific field or discipline but seen more as a practical instrument or method with clear objectives as to increase

sport participation in society and to serve as a countermeasure to social inadequacies namely obesity, inactivity, lack of integration etc.

A similar picture is also painted by the results of the existing international comparative studies on the national status of Sport for All. Accordingly, Sport for All on the regional, national and local scale develops and expands immensely through practical interventions namely: events, campaigns, targeted programmes etc. However, this is very often the case without or with only limited scientific support or analysis. This apparent lack of communication between practitioners and theorists appears to block the progress and development of knowledge in this domain, which constitutes a problem to be investigated in the future.

1.4. Methodology

As noted earlier, scientific research specifically focused in Sport for All is very limited. As a result, the information and data on the development of Sport for All internationally is mainly derived from practice. Consequently, the information about the research methodology also used in the field of Sport for All will be presented by the various academic scientific disciplines in this edition.

1.5. Relationship to Practice

With the growing political significance of Sport for All, as reflected in various policy papers, constitutions and laws, there is an increasing demand for qualified managers and leaders in Sport for All – both professional and volunteer. On the level of governments and ministries, municipalities and city councils, sport organisations, schools and universities, etc. the need for specially trained and qualified Sport for All managers and administrators is obvious. Yet, there are only a few opportunities for future managers in this field, especially from a targeted and practical educational standpoint. This suggests a need for Higher Education institutions firstly to recognise such a market and secondly to stimulate scientific research in the field. In the meantime, Sport for All is not included as a subject in its own right in the majority of university curricula and educational programmes. Therefore, Sport for All is not considered as a subject of specific demand and importance in the academic field.

Currently, it is national sport organisations that offer practical skills and knowledge in their formal and informal education programmes mostly for volunteers. Moreover, on the international level, apart from conferences and congresses which are only accessible for a few, there are relatively few opportunities for gaining additional knowledge and qualifications in this field, such as the 'Certified Leadership Course in Sport for All' offered by TAFISA in cooperation with the IOC. This illustrates an apparent deficit of opportunities, but at the same time a great demand for respective qualification programmes in Sport for All.

1.6. Future Perspectives

According to the findings of the TAFISA Almanac, it is obvious once again that Sport for All has considerably gained recognition and status on the national level in many ways. It is expected that Sport for All will continue to:

- Face quantitative growth
- Result in an intercultural process
- Be based on a verbal and visual change of understanding sports
- Be given a role in civilisation change
- Be evaluated for its benefits for the individual, for society and for the sport system.

In contrast to this generally positive picture, it has to be noted that also in the future there will be negative aspects namely:

- Inadequate status/kudos
- Lack of facilities and personnel
- No regular programme
- Insufficient budget.

From this, the following practical implications for the future Sport for All development can be derived:

Networking and Exchange

The institutions of Sport for All can become more effective through cooperation and shared capacity building. By working together they can become more visible in the arena of international sport, be taken more seriously by elite sport, and be better supported by governments and the business world. Moreover, due to limited financial conditions, it is important not to duplicate effort among organisations. What has been developed successfully in one country should be available to all other interested parties.

Scientific Research

Regular scientific research should be effectively executed and stimulated in the Sport for All field by motivating academic experts to define specific multi-disciplinary areas of Sport for All for investigation and research, establishing cross-sector networks between academic institutions and sport bodies with the ultimate goal to minimise the existing gap between practice and theory in Sport for All.

Bridging the Gap

The Sport for All movement must be flexible reacting to the varying social, political and economic conditions around the world, and strive to reduce inequalities in sports participation for all in both developed and developing countries.

Encouragement

The IOC, with its Sport for All Commission, has assisted the development of Sport for All remarkably since the 1980s. The IOC and SportAccord (formerly GAISF) should support the global Sport for All movement in its own right by encouraging effective involvement in both elite and grass roots sport.

Extension of Perspective

The potential of Sport for All could be better recognised as a tool for the socialisation of humans into a culture of peace. This might involve further recognition and promotion of traditional games and sports, as well as physical education for all children. Social and cultural aspects of Sport for All could also be a focus of research. The new image and significance of Sport for All correlates with a better understanding of its various benefits, not only for the individual but also for society as a whole. The future message is that Sport for All is embedded into a social context and thus can serve as a vehicle to better cope with contemporary and future social challenges.

Public Health

The Sport for All movement could contribute to a new understanding and practice of healthy behaviour, by working with professionals in the health sector at the local, national and global level.

Leadership Education

One of the most crucial issues relates to educational schemes for the training and qualification of Sport for All leaders. It deals with the transfer of knowledge beyond the national level to the local and regional level of Sport for All leaders. Worldwide there is a lack of sufficient opportunities to fill in this gap.

Targeted Approach

In order to ultimately reach 'All' a targeted approach needs to be increasingly applied. This includes:

- The identification of large and significant groups of population
- Reaching them by using specific and targeted marketing instruments and tools
- Analysing the special needs of selected target groups
- Designing programmes according to specific needs.

References

- Diem, C. (1960) Weltgeschichte des Sports und der Leibeserziehung (World History of Sport and Physical Education). Stuttgart: Cotta-Verlag.
- Bogeng, G.A.I. (Ed.) (1926) Geschichte des Sports aller Völker und Zeiten (History of all Peoples and Times), Leipzig: E. A. Seemann.
- Mathys, F.K.. (1978) Das Spiel als Fest. (Play as a Festival). In Das Spiel im Freizeitsport. Heft 48. Schriftenreihe 'Berichte und Analysen'. Frankfurt: Deutscher Sportbund.

2. Organisational Network

2.1. Major International Organisations and Networks

There are different international organisations operating in the field of Sport for All with the major ones being:

- The Association For International Sport for All – TAFISA
- International Sport and Culture Association – ISCA
- Federation International Sport pour Tous – FISpT
- International Olympic Committee with its Sport for All Commission
- UNESCO with CIGEPS
- Agita Mundo
- Health Enhancing Physical Activity Network – HEPA
- African Union with its relevant committees.

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Europe

- European Non-Governmental Sport Organisation – ENGSO
- European Company Sport Federation – EFCS
- HEPA Network.

Asia

- Asian Sport for All Association – ASFAA.

Americas

- Pan American Sport for All Federation – PASFAF.

With regard to the organisation of Sport for All on the national level, it is interesting that it appears that in those countries where traditional sport systems are not prepared to integrate Sport for All as a legitimate and deserving subsystem, there is a tendency for the establishment of independent national Sport for All organisations, separate from the traditional sport system. Obviously, in those countries with an independent organisation the conditions for an integrative solution in the traditional sport structure are not as effective as the demand of a separate structure. However, it is yet not clear whether this is for the advantage or disadvantage for the national and international development of Sport for All. Moreover, from a structural point there is an increasing establishment of internationally operating Sport for All organisations, very often originating from a regional traditional sport that is trying to spread globally.

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

Not applicable.

3.2 Reference Books, Encyclopaedias, etc.

DaCosta, L. and Miragaya, A. (2002). *Worldwide Experiences and Trends in Sport for All*. Oxford: Meyer and Meyer Sport.

3.3. Book Series

Not applicable.

3.4. Congress/Workshop Proceedings

With the so-called Trim and Fitness conferences started already in 1969, a series of various conferences with Sport for All as major focus commenced since then. This includes:

- The biannual TAFISA World Congresses beginning 1991 in Bordeaux and formally the successor of the Trim and Fitness Conferences
- The biannual International Sport for All Conference (previously Congress) under the auspices of the IOC and formally building on the 1986 Congress in Frankfurt
- The annual MOVE Congresses under the auspices of ISCA (International Sport and Culture Association).

The proceedings, as well as declarations and resolutions of those congresses, are normally published in report books that can be a valuable source for scientific dealings with Sport for All.

3.5. Data Banks

Not applicable.

3.6. Internet Sources

Not applicable.

4. Appendix

4.1. Terminology

Not applicable.

4.2. Position Statements

Not applicable.

Free Statement

Over the years, a number of investigations have been launched to find out about the status of Sport for All development on the national level, to compare the results and to identify general trends and development. Here, the following studies can be named:

- Four TAFISA surveys circulated amongst member organisations with the last one in 2007
- DaCosta, L., and Miragaya, A. (Ed.) (2002). Worldwide experiences and trends in sport for all. Oxford, UK: Meyer and Meyer Sport
- Sasakawa Sport Foundation (2011). TAFISA Global Almanac on Sport for All 2011. Tokyo, Japan: Sasakawa Sport Foundation
- Loughborough University (2008). Current status and future visions of Sport for All in Europe. Report for the International Olympic Committee.

The 20th century was the first saeculum of Olympic sport; the 21st century will see the rise of Sport for All. Coubertin's idea of creating elite athletes by lifting the level of participation in the general population, by using elite athletes as role models for an average human, will have to be completed by a redirected focus, not only on the elite but on the humankind as a whole.

CHILD MALTREATMENT IN SPORT

Mike Hartill

General Information

1.1. Historical Development

Contemporary sport has commonly been seen as an important element of a healthy childhood. However, with 20th century professionalization and commodification of sport, and state agencies', sports organisations', coaches' and competitors' willingness to engage in practices seriously damaging to health, children's participation in sport has increasingly been questioned. This has gradually developed into a distinct field of academic inquiry, embracing the study of child maltreatment, exploitation and abuse in sport.

General interest in child maltreatment in sport originally centred on 'over-training' and 'burn-out': sociologists have, since the 1970s, argued that competitive sport often resembles work more than leisure. However, the development of this field is most clearly traceable to concerns about sexual violence and exploitation of women and girls in sport. From the mid-1980s, with increasing public support since the mid-1990s, a handful of academics (mostly within the social sciences) raised concerns over sexual harassment and child abuse in sport, as well as more general concerns about child exploitation and disregard for children's rights within sport.

A watershed came in the mid-1990s, when two cases drew widespread media attention and public outrage. In the UK, Olympic swimming coach Paul Hickson was jailed for 17 years for the rape and sexual abuse of teenage female swimmers in his care; and in Canada, Graham James was jailed for two years for sexually abusing two teenage male hockey players. (Both later published autobiographies documenting their experiences: Kennedy, 2006; Fleury, 2009.) In the US, recent cases of sexual abuse in swimming, gymnastics and in relation to Penn State University football programme have also drawn a great deal of media attention.

In the UK and Canada, the ensuing 'moral panic' about sexual predators operating unchecked within sports contexts led to considerable policy intervention to prevent child abuse. In the 21st century child protection policy in sport has developed rapidly, although only in a handful of western countries. Research into this topic has struggled to keep up; hence much is still to be learnt about the extent and nature of the problem, and the impact of policy initiatives. This field of sport studies, if now beyond infancy, has yet to reach adolescence.

Academic research, particularly from feminist perspectives (Brackenridge, 2001) has both given birth

to this field, and played a major part in shaping its development within the delivery and practice of sport. During the first decade of the 21st century, in some western countries, this field of study has impacted significantly upon the practice, delivery and governance of sport in the form of 'child protection'; and, more recently, under the more expansive nomenclature of 'safeguarding' and 'athlete welfare'. In response to advocacy, the International Olympic Committee has adopted consensus statements on 'sexual harassment and abuse in sport' (2007); and 'training the elite child athlete' (2008). Furthermore, in 2010, the problem of child maltreatment in sport was internationally recognised in UNICEF's report, 'Protecting children from violence in sport'.

1.2. Function

Research into child maltreatment in sport is interested in bringing to light elements of sports practice that have been previously hidden, ignored and/or accepted. The fundamental objective is to work towards, sport environments underpinned by children's rights, where children are free to engage in sports and physical activity safe from harm. Early studies have also been concerned to give voice to victims: acknowledging the experiences and perspectives of those who have suffered abuse within sport, and whose voices have been previously silenced, is a crucial aspect of this field.

This underpinning approach signifies its feminist and sociological origins, which can bring it into conflict with other sport science disciplines and organisations that pay little attention to the socio-cultural aspects of sport and/or children's rights. However, the objective of improving sport environments for children also has the capacity to draw together individuals and groups from a range of backgrounds and agendas. The study of child maltreatment in sport brings together researchers from different sports-focused disciplines, particularly sociology, psychology, coaching, physical education and sports medicine. Hence, as in wider child maltreatment studies, tensions can exist about the way child maltreatment should be understood and approached, within research and practice. Nevertheless, sociological notions of culture, power, gender and rights, lie at the heart of current theoretical analyses about child maltreatment and abuse in sport.

The aims of child maltreatment and exploitation in sport research are to:

- examine the forms and extent of maltreatment, exploitation and abuse within children's sport
- consider how sports organisations can best protect and safeguard the children in their care
- examine and develop child abuse prevention programmes within sport
- consider how sport organisations can best support children who have been abused and exploited within sport
- examine critically the role, function and meaning of sport in children's lives
- consider the role that sport plays in constructing and reproducing dominant notions about childhood, adult-child relations, discipline, welfare, etc.

- develop and advocate sports practice which protects and prioritises the rights and well-being of the child, above the interests of competitive success and sports organisations, and/or the traditions and cultures that constitute contemporary sport.

1.3. Body of Knowledge

A small but substantive body of research literature on abuse in sport, principally from Europe and North America, now exists. Only a brief summary of this is possible here. Studies into *sexual harassment*, exploitation and abuse dominate, and understanding of this problem has advanced considerably over the past two decades. It is generally acknowledged that sexual abuse also constitutes physical and emotional abuse, but that disaggregation of the various forms of abuse and maltreatment in sport (including neglect and bullying) is crucial. Scholars have developed definitions of abuse and conducted studies with victims of abuse in sport, in order to offer descriptive accounts of abuse (including the 'grooming' process), sport-based risk-factors and contextualised explanations to inform policy interventions, child protection procedures and guidelines for ethical conduct/best practice in sport.

Despite the field now having a 20 year history, very few studies that measure prevalence or incidence of abuse in sport exist. To date, no federation has commissioned a prevalence study of maltreatment in its sport. International sport federations and governments appear equally uninterested in determining the extent of maltreatment in sport. Within the field, there is a sense that action from governing organisations is typically reactive and conservative, often based on concerns about the financial implications of potential legal judgements, rather than pro-active and underpinned with genuine desire to effect change that will prioritise children's rights and welfare.

General population studies indicate that in the sexual abuse category, children are more at risk from adults who are not their parents but are known to them and that a significant proportion of these perpetrators are not related by family. It is also generally acknowledged that perpetrators of sexual abuse are predominantly, but not exclusively, male and that female coaches may also employ sexually harassing behaviour. The most rigorous study of sexual abuse in sport, conducted in Australia, of 370 competitive and elite level athletes, found that '31% of female and 21% of male athletes reported experiencing sexual abuse at some time in their lives. Of these, 41% of females, and 29% of males had been sexually abused within the sports environment' (Leahy *et al.*, 2002). These figures reflect gender differences reported in wider studies of child abuse prevalence. This study also supported anecdotal evidence that elite-level children appear to be at greater risk of sexual abuse than non-elite competitors. Studies also indicate that perpetrators in sport abuse multiple victims and that victims usually do not report abuse.

Such evidence provides support for sports scholars to draw upon wider feminist theorising on (sexual) violence that view such acts as manifestations of a patriarchal social system – a system that many socio-cultural theorists argue finds its ideal hyper-masculine expression within the male-dominated field

of sport, which has serious consequences for females within that realm. To a degree, this emphasis has been at the expense of studies into male sexual victimisation, female perpetration and emotional abuse in sport, which are not as readily explained through established feminist perspectives. However, central to much sociological, philosophical and feminist theorisation of child maltreatment in sport, is the view that the cultural norms of much organised (children's) sport make it an ideal context for abusive behaviour to flourish, undetected. Within such critique, it is not simply that perpetrators are drawn to sport because of the large numbers of children engaged in sport, the opportunity for physical contact or a lack of safeguards and vetting procedures. Rather, it is the cultural fabric of sport, with its binary emphasis on corporeal domination, instrumentalism and winning at all costs, irrespective of well-being or human/children's rights, which makes it an environment susceptible to abusive relations. Within the literature, the voices of many athletes (and coaches) provide testimony to support this perspective.

1.4. Methodology

The study of child maltreatment is multi-disciplinary in nature. Researchers bring a range of preferred methodologies, closely linked to the different ways the problem is understood and theorised. Within studies on child sexual abuse, for example, there has been considerable conflict between psychological approaches that focus on the pathology of the perpetrator who is usually selected from a clinical sample (and often incarcerated) and feminist approaches that focus on the social organisation of a society that privileges particular forms of masculinity and encourages or permits the subordination and sexualisation of females. Within sports studies these tensions have yet to arise explicitly. This has much to do with the sophisticated and inter-disciplinary nature of the early theorisation of abuse in sport that recognises the need for combining macro and micro approaches (Brackenridge, 2001) but also perhaps the early stage of theorising within this field.

Child maltreatment and abuse is obviously a very sensitive topic and participants can be difficult to locate. Many studies have thus focused on normative aspects of behaviour towards children and young people in sport, subsequently drawing out the implications for child maltreatment. Research should be approached cautiously, with due attention to the research methodology and social work literature, particularly within childhood and child abuse studies. Attention both to ethical dilemmas presented in such research, as well as strategies for ethically sound research practice (especially where children or victims of abuse are involved) is extremely important. Studies with victims of child maltreatment in sport have, to date, focused on adult populations and are therefore retrospective, although the importance of children's participation in research generally is well recognised. Whilst the voices of perpetrators of sexual abuse do occasionally appear in the literature, to date no study has focused on the perspectives and experiences of adults incarcerated for crimes against children in sport.

It is generally recognised that large scale quantitative data on incidence and prevalence of all forms of child maltreatment in sport is sorely needed. Whilst a handful of quantitative studies on various

aspects of abuse in sport do exist, difficulties in funding such research and the reluctance of sports organisations to examine this problem in any depth, means that research is often small-scale and heavily reliant on the personal commitment of individual researchers, support from their institutions and the willingness of victims/survivors to participate in research. The predominance of feminist (and pro-feminist) perspectives in this field has helped to ensure that the voices of victims remain central to the development of knowledge. Such approaches emphasise the importance of depth rather than scale and are typically qualitative in design, emphasising the importance of narrative and the need to provide sufficient space for participants to express and develop their own perspectives/stories, rather than being required to shape their experiences to pre-determined categories. Life-history/narrative research design, both with victims and perpetrators, is considered a more appropriate response to the ethical dilemmas raised.

1.5. Relationship to Practice

This field of study is explicitly predicated on its desire to effect change in practice. Child maltreatment in sport research has underpinned the development of child protection policy in sport and the associated professional training, developed for those working within sport, either in a paid or voluntary capacity. Academics, not only raised the issue of child abuse in sport (and were originally vilified for it), arguing that child safety should be a fundamental starting point within the governance of sport; but also advised governing agencies on their child protection policy, safeguarding and welfare arrangements. Arguably, professional practice within sport has perhaps been impacted by this research agenda more significantly than any other in recent times: certainly, research and practice have developed in close proximity.

It is in the UK that the impact of 'child protection' on sports practice has been most evident. As a result of recommendations made by a national task-force, the Child Protection in Sport Unit (CPSU) was established in 2001 jointly between the Department for Culture, Media and Sport (via Sport England) and the National Society for the Prevention of Cruelty to Children (NSPCC). The CPSU serves as an advisory body to UK sport agencies and has established a set of 10 National Standards for safeguarding in sport for governing organisations, a range of online support materials, and published a national strategy for child protection and safeguarding in sport (2006-12). Meeting the criteria for the standards is linked to a tiered accreditation scheme for federations, administered by the CPSU. Significantly, receipt of government funding for federations is dependent upon successful accreditation; however, the effectiveness of this approach has not been explored. In 2011 the CPSU launched a 'post-standards' safeguarding framework which introduces a 'self-assessment' model of implementation, also with a tiered accreditation scheme.

In less centralised ways, other countries and their sports federations have implemented changes to the way sport is delivered, on the basis that children have a right to participate in sport, safe from harm in an appropriate environment. Notable examples are Canada, Australia and Norway. Awareness

of abuse in sport also appears to have been heightened within the USA, following high-profile coverage of sexual abuse in swimming and in relation to a university football programme. Indeed, within the often conservative environment of sports where traditional notions of adult-child relations dominate, it is perhaps through 'child protection' and 'safeguarding' discourse that children's rights in sport are beginning to find an appropriate vehicle for implementation at local level. A key element of research and advocacy within this field is to address the ways in which sport approaches, defines and constructs childhood and children's rights.

The development of child protection and safeguarding in sport policy has had a significant effect on sports organisations. The UN's recognition of 'child protection in sport' as a strategic priority area within its thematic area of 'Sport and Child and Youth Development' is clearly an important step. However, resistance to such measures and heightened fear of false allegations amongst adults within sport are well-documented. Nor is it yet clear what impact child protection policy in developed countries has had on children's experiences within sport, or the extent to which they have reduced child maltreatment in sport. In countries and sports where policy development has been rapid but unaccompanied by research programmes, rigorous impact assessments prove difficult due to the absence of baseline data from which change can be documented and evaluations of effectiveness and value made. Policy evaluation research is a key area for future development.

1.6. Future Perspectives

Despite the significant contributions of ground-breaking scholars like Celia Brackenridge, Peter Donnelly, Kari Fasting and Sandra Kirby, this field of research is both relatively young and sparsely populated. There is much work to be done in verifying early findings, progressing established agendas and new lines of empirical inquiry, and developing new perspectives and approaches. Both empirical research and theoretical development are required to verify, challenge and develop current knowledge and practice.

The Innocenti Research Centre's report (UNICEF, 2010) recommends improvements in:

- Data collection and knowledge generation about violence to children in sport
- Development of structures and systems for eliminating and preventing violence to children in sport
- Education, awareness-raising and training on this subject
- Promotion of ethical guidelines and codes of conduct as part of the prevention system.

Also in 2010, the Brunel International Research Network on Athlete Welfare (BIRNAW) was launched at an international symposium on elite child athlete welfare. The symposium concluded with an attempt to outline future research priorities:

- Prevalence-related studies on maltreatment within and across nations and sports
- Studies to bridge currently recognised gaps in knowledge

- International mapping and evaluations of child protection, safeguarding and welfare in sport policies
- Studies related to the consequences and costs of maltreatment in sport, as well as the child protection, safeguarding and welfare benefits of sports participation.

The challenge was for researchers to develop knowledge and practice through international collaboration and knowledge-exchange. With the expansion of this field of inquiry, the next decade will yield considerable gains in understanding of child maltreatment in sport and the most effective means by which it can be addressed. It is also clear that all national and international initiatives seeking to utilise 'the power of sport' to improve the lives of children and young people, should be informed by knowledge of child maltreatment in sport.

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2. Organisational Network

2.1. Major International Organisations and Networks

The Brunel International Research Network on Athlete Welfare (BIRNAW)

<http://www.brunel.ac.uk/about/acad/sse/sseres/ssereseearchcentres/youthsport/bir naw>

The United Nations Office on Sport for Development and Peace: Sport and Child and Youth Development International Working Group (SDP IWG)

http://www.un.org/wcm/content/site/sport/home/unplayers/memberstates/sdp_iwg_thematicwgs

2.2. Relevant Regional or National Organisations and Networks or Specialised Centres

Australia

Australian Sports Commission

http://www.ausport.gov.au/supporting/ethics/child_protection

Play by the Rules

<http://www.playbytherules.net.au/>

Canada

Canadian Centre for Ethics in Sport

<http://www.cces.ca/en/page-99>

Centre for Sport Policy Studies (University of Toronto)

http://www.physical.utoronto.ca/Centre_for_Sport_Policy_Studies/About.aspx

United Kingdom

Child Protection in Sport Unit (Sport England/NSPCC) England.

http://www.nspcc.org.uk/inform/cpsu/contact/contact_wda60537.html

Children 1st (SportScotland) Scotland.

<http://www.children1st.org.uk/services/87/safeguarding-in-sport>

Child Protection in Sport Unit Northern Ireland

NSPCC, Block 1, Jennymount Business Park, North Derby Street, Belfast BT15 3HN.

Child Protection in Sport Unit Wales

NSPCC Cymru/Wales, Diane Engelhardt House, Treglown Court, Dowlais Road, Cardiff CF24 5LQ.

Institute of Youth Sport (Loughborough University)

<http://www.lboro.ac.uk/departments/ssehs/research/sport-science/youth-sport/>

USA

Institute for the Study of Youth Sports (Michigan State University)

<http://www.educ.msu.edu/ysi/mission.htm>

Sport in Society (Northeastern University)

<http://www.northeastern.edu/sportinsociety/about/index.html>

Women's Sports Foundation

<http://www.womenssportsfoundation.org/>

2.3. Specialised International Degree Programmes

Not applicable.

3. Information Sources

3.1. Journals

Childhood

<http://chd.sagepub.com/>

Children and Society

<http://www.wiley.com/bw/journal.asp?ref=0951-0605>

Child Abuse and Neglect

http://www.elsevier.com/wps/find/journaldescription.cws_home/586/description#description

Child Abuse Review

[http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1099-0852](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-0852)

Child and Youth Services

<http://www.tandf.co.uk/journals/WCYS>

International Review for the Sociology of Sport

<http://irs.sagepub.com/>

Journal of Applied Sport Psychology

<http://appliedsportpsych.org/>

Journal of Sexual Aggression

<http://www.tandf.co.uk/journals/titles/13552600.asp>

Leisure Studies

<http://www.leisure-studies-association.info/LSAWEB/Index.html>

Sport and Social Issues

<http://jss.sagepub.com/>

Sport in Society

<http://www.tandf.co.uk/journals/titles/14610981.asp>

Youth in Society

<http://yas.sagepub.com/>

Sport, Education and Society

<http://www.tandf.co.uk/journals/cses>

Vulnerable Children and Youth Studies

<http://www.tandf.co.uk/journals/RVCH>

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3.5. Congress/Workshop Proceedings

Not applicable.

3.6. Data Banks

Not applicable.

3.7. Internet Sources

Child Helpline International

<http://www.childhelplineinternational.org/en>

Child Protection in Sport Unit

http://www.nspcc.org.uk/Inform/cpsu/cpsu_wda57648.html

International Society for Prevention of Child Abuse and Neglect (ISPCAN)

<http://www.ispcan.org/>

Mom's Team

<http://www.momsteam.com/>

Olympic.org (Website of the Olympic Movement)

Sexual harassment and abuse in sport <http://www.olympic.org/sha>

Respect in Sport

<http://www.respectinsport.com/index.html>

SurvivorsUK

<http://www.survivorsuk.org/>

UNICEF

<http://www.unicef.org/index.php>

4. Appendix Materials

4.1. Terminology

Child: Any person under the age of 18 (United Nations Convention on the Rights of the Child, 1989).

Child Abuse: According to the UK Child Protection in Sport Unit (CPSU): 'Child abuse is any form of physical, emotional or sexual mistreatment or lack of care that leads to injury or harm.

'It commonly occurs within a relationship of trust or responsibility and is an abuse of power or a breach of trust. Abuse can happen to a child regardless of their age, gender, race or ability. Abusers can be adults (male or female) and other young people, and are usually known to and trusted by the child and family. For further information and definitions of particular types of abuse, see: http://www.nspcc.org.uk/Inform/cpsu/helpandadvice/organisations/defining/definingchildabuse_wda60692.html

Child Protection: According to UNICEF, the term 'child protection' refers to 'preventing and responding to violence, exploitation and abuse against children – including commercial sexual exploitation, trafficking, child labour and harmful traditional practices, such as female genital mutilation/cutting and child marriage.'

http://www.unicef.org/protection/files/What_is_Child_Protection.pdf

Safeguarding: According to Parton (2006: p. 8) the notion of safeguarding is 'where the prime concern and object of intervention is safeguarding and promoting the welfare of the child.' According to the CPSU (2006), 'safeguarding' refers to 'the process of protecting children from abuse or neglect, preventing impairment of their health and development, and ensuring they are growing up in circumstances consistent with the provision of safe and effective care which is undertaken to enable children to have optimum life chances and enter adulthood successfully.' See Brackenridge, Pitchford, Russell and Nutt (2007: pp. 22-26) for a discussion of the UK's discursive shift from 'child protection' to 'safeguarding' in sport policy.

Elite Child Athlete: According to the International Olympic Committee's (2007) Consensus Statement: 'The elite child athlete is one who has superior athletic talent, undergoes specialised training, receives expert coaching and is exposed to early competition. Sport provides a positive environment that may enhance the physical growth and psychological development of children. 'This unique athlete population has distinct social, emotional and physical needs which vary depending on the athlete's particular stage of maturation. The elite child athlete requires appropriate training, coaching and competition that ensure a safe and healthy athletic career and promote future well-being.'

4.2. Position Statements

Bill of Rights for Young Athletes (1979)

<http://www.educ.msu.edu/ysi/parents/billofrights.htm>

International Olympic Committee (IOC) Consensus Statement on Sexual Harassment and Abuse in Sport (2007).

<http://www.olympic.org/Documents/THE%20IOC/OFFICIAL%20SHA%20Statement.pdf>

Panathlon Declaration (2004)

http://www.paralympic.org/export/sites/default/IPC/IPC_Handbook/Section_2_Panathlonx20Declarationx20English.pdf

Women's Sports Foundation: Sexual Harassment and Sexual Relationships between Coaches, Other Athletic Personnel and Athletes: The Foundation Position

http://www.womenssportsfoundation.org/sitecore/content/home/advocate/title-ix-and-issues/title-ix-positions/sexual_harassment.aspx

Part V.

Sport Science Careers

Occupations and Careers in Sport Science

Search Strategies and Decision-making for University Students

Karen Petry and Gretchen Ghent [†]

Introduction

The purpose of this text is to outline sources of information to assist the college and university student in exploring the numerous options for finding meaningful work (or further education). It is assumed that students will have, or are in the process of, obtaining a Bachelor's or Master's degree in sport science, physical education, sport management, health related fields or kinesiology.

This resource guide begins with information on:

- personal exploration of interests
- researching possible jobs in the sport sciences
- where to find information on performing an effective job search strategy with websites that list sports jobs in many different settings and
- the possible occupations and job titles for various specialisations in the sport sciences, medicine and allied health fields.

1. Exploration of Interests, Values, Skills and Workplace Possibilities

During the first or second year of university, students may want to probe their personal interests, talents, skills and workplace preferences. Staff members at the university's career advice centre are available for consultation. They can administer tests that will indicate a person's skills, talents and strengths and weaknesses. These staff members can help students decide which programmes or faculties would develop their talents and skills. Also found in a university guidance centre are pamphlets and other information material that describe professions and jobs plus educational requirements.

Many faculties of sport science also have undergraduate or faculty advisors who can provide career counselling for current or potential undergraduate students. These individuals can offer assistance in mapping out a course of instruction, discussing career paths of recent graduates and otherwise advising students in the more specific details of university programmes and courses.

2. Researching Possible Occupations in the Various Sport Sciences Fields

Since the mid 1990s, much information is available on the internet about career possibilities in the sport sciences with some websites being devoted to actual job listings. Exploration of these websites can give the student an excellent idea of the wide range of job possibilities. In some cases, where a province or state or professional association has legislated specific certification or qualification requirements, many of the websites will note these requirements. There are three types of websites that can be consulted where information on potential or actual job titles/descriptions may be found. They include:

- websites of professional associations
- university sport sciences faculties/schools and
- public sector agency and commercial “sports jobs” websites.

For each of these areas, some examples are listed below.

2.1. Searching Professional Association Websites

Some professional associations have a section on education and careers for their particular discipline (e.g., biomechanics, sport psychology, exercise science, sport medicine). For a list of professional associations, consult the following two websites:

- Scholarly Sport Sites, Associations (Scholarly/Expert/Specialist) <http://www.starkcenter.org/research/sportswebsites/>
- SPORTQuest, Associations <http://www.sirc.ca/careers/index.cfm>

Examples of professional association career information include:

- Professional Fields of Study in Sport and Movement Sciences (National Association for Sport and Physical Education, USA) <http://www.aahperd.org/naspe/careers/Fieldsofstudy.cfm>
- Careers in Sports Medicine and Exercise Science (American College of Sports Medicine) <http://www.acsm.org/> (Click on Certification)
- National Strength and Conditioning Association Career Resources <http://www.nsca-lift.org/careerresources/default.shtml>
- PE Central, Becoming a Physical Education Teacher <http://www.pecentral.org/professional/becomingapeteacher.html>

2.2. Searching University Faculties/Schools of Sport and Exercise Science, Kinesiology, Human Performance

Universities and colleges that have faculties or schools of sport sciences often have a section on their website that describes the career possibilities for their graduates. In some cases, the websites include surveys of job titles and further education pursuits of recent graduates. In today's changing job market, these recent surveys are very valuable and provide excellent ideas for potential employment.

2.2.1. Career Advice – North America, Australia and New Zealand

University of Waterloo Applied Health Sciences

www.ahs.uwaterloo.ca/prospective/kin/careers.html

Career Services (University of Michigan. Faculty of Kinesiology)

Career Planning: <http://www.kines.umich.edu/advising-oss/careers/what-can-i-do-my-major>

Career Mentoring & Networking: <http://www.kines.umich.edu/alumni/alumni-careers/alumni-career-information>

What can I do with a Major in Kinesiology (University of Wisconsin – Eau Claire)

<http://www.uwec.edu/career/index.htm>

Internships and Careers (Indiana University, HPER, Dept of Kinesiology)

www.indiana.edu/~kines/careers/

Careers (Griffith University, School of Physiotherapy and Exercise Science)

<http://www.griffith.edu.au/health/school-physiotherapy-exercise-science>

Career Paths in Physical Education (University of Otago, School of Physical Education)

<http://physed.otago.ac.nz/prospective/careers.html>

2.2.2. Career Advice – Europe, Germany, South Africa, UK

Stellenbosch University. Faculty of Education. Sport Science: General Information

<http://academic.sun.ac.za/education/faculty/sport/studentinfo.html>

University of Edinburgh. Moray House School of Education. Careers Planning for Sports Students

www.education.ed.ac.uk/careers/sports.html

Career Advice. German Sport University, Cologne

<https://www.dshs-koeln.de/wps/portal/de/home/studies/career>

European Association for Sport Employers Operating in Not-for-profit Sport, Professional Sport and Active Leisure

www.easesport.org/accueil.php

Career Advice Portal and Global Job Site Supporting Professionals Working in the Sports Sector

www.globalsportsjobs.com

Database of the Employer and Employee Organisations in the EU25

www.easesport.eu/ease/rbt-db/country.php?id=14

EOSE – Vocasport: Improving Employment in the Field of Sport in Europe Through Vocational Training

<http://www.eose.org/projects/completed-projects.html>

3. The Job Search Strategy

Finding the appropriate job can be very time-consuming, but rewarding if the outcome results in a positive job placement. A number of university websites provide succinct advice on the strategy to employ to find a good and challenging job. These sources include sections on:

- Resume and curriculum vitae writing
- Job interview preparation
- Job search strategies
- Networking
- Direct contact
- Job fairs
- Responding to advertisements and public announcements in newspapers, periodicals.

See:

University of New Hampshire. University Advising and Career Center

www.unh.edu/uacc/

York University Career Services. Career CyberGuide

www.yorku.ca/careers/cyberguide/introduction.html

Some of the commercial sports jobs websites also give advice on the job search. See how to Conduct an Effective Job Search (MonsterTRAK)

<http://career-advice.monster.com/job-search/career-tips-by-nicole-williams/jobs.aspx>

3.1. Searching the Internet for Positions Available

The website *Jumpinsport* was launched in September 2010, and publishes all of the latest vacancies in sport from around the world, volunteering opportunities in sport, Academic Institution profiles, and tips and advice to help in searching for jobs.

www.jumpinsport.com

The website *globalsportsjobs* is a career advice portal supporting professionals working in the sports sector. The website offers to build a network, to search for sports jobs and to make use of the career advice pages.

www.globalsportsjobs.com

3.1.1. Positions Available – North America, Australia and New Zealand

Job Opportunities in Sport (Canadian Interuniversity Sport)

www.universitysport.ca/e/jobs/index.cfm

Australian Sports Commission, Jobs – Current Vacancies

www.ausport.gov.au/about/jobs

Sport and Recreation New Zealand (SPARC) Job Seekers

<http://www.sparc.org.nz/en-nz/Information-For/Job-Seekers/>

3.1.2. Positions Available – Europe, Germany, Oceania, UK

European Action Sports industry job offer, sales agent and distributor search website

www.aspom.com/en

Job vacancies in 6 different sport sectors (Germany)

www.joborama.com

Leisure Jobs (Germany)

www.sport-job.de

German Vacancies in Sport Science

www.sportwissenschaft.de

European Vacancies in Sport Science via European College of Sport Science

<http://www.ecss.mobi/>

Sport Jobs and Internships (Germany)

www.spocross.com

Sport Career Opportunities (German Sport University Cologne)

<https://www.dshs-koeln.de/wps/portal/de/home/studies/career/Jobboerse>

Leisure Jobs (UK)

www.leisurejobs.com/

Sport Jobs (UK)

www.uksport.gov.uk

English Institute of Sports (UK)

www.eis2win.co.uk

The British Association of Sports and Exercise Sciences (UK)

www.bases.org.uk

Sport and Leisure Jobnetwork (UK)

www.jobswithballs.com

Sports Coaching Jobs (UK)

www.jobs.ac.uk/categories/sportscoaching

3.2. Subscription-Based Job Websites

The websites listed here require a weekly, monthly or yearly subscription fee to be paid by the job seeker.

- Careers in Sports, (SBRnet: Sports Business Research Network) www.sbrnet.com/
- Women'Sports Job Wire&trade www.womensportsjobs.com/

4. Possible Occupations for University/College Graduates in Sport Sciences

Main Professional Occupation

The results of a European Union funded project called "Vocasport" (2004) propose to make a distinction between "sport professions" and "sports-related professions". The latter is concerned with persons who engage with a sporting activity as well as those who manage it directly. They all have to show knowledge of the theory and practice of sport and their application, while receiving remuneration.

Sport Professions

- professional sportspersons/athletes, participating in a limited number of sports and in general depending on the sporting events that constitute their livelihood
- sports officials, i.e. all those who, as referees, judges or timekeepers, directly supervise the conduct of sporting competitions

- sports activity leaders/development officers, who use sport as a means of getting specific groups of the population (elderly people, the disabled, young people, etc.) involved in team activities
- sports instructors, who teach one or more specific sporting activity to groups of the population for them to learn or develop their abilities
- sports coaches responsible for preparing and guiding systematic performance in a given sport.

“Sports-related professions” have certain characteristics of institutionalisation, e.g., professional trade unions or specific training. Although globally belonging to other occupational fields, they require a high level of particular skills in the field of sport and thus qualifying for this category of sport professions:

- professional managers of sports or sports-related organisations
- sports doctors
- physical education and sports teachers and coaches in schools and children's/young people's environments
- sports journalists and other specialists in communication through or about sport
- physiotherapists specialising in sport
- agents or promoters of events or professional sportspersons
- sellers of sports goods
- caretakers of sports facilities and other reception staff
- maintenance workers of sports facilities.

Another classification of sport occupations was developed in 2007/2008:

Technical and Associate Professionals

- Professional Athletes and Sports Players
- Sport Official
- Sport Animators
- Sport Instructor
- Sport Coach
- Fitness and Recreation Instructors and Programme Leaders.

Managers

- Senior Sport Government Officials (at state level, national and local, include strategic managers of physical education in local government)
- Senior Officials of Sport Organisations (at federation level)
- Managing Directors and Chief Executives of Sport Organisations
- Finance Managers of Sport Organisations
- Human Resource Managers of Sport Organisations
- Sales and Marketing Managers of Sport Organisations
- Advertising and Public Relations Managers of Sport Organisations
- Manufacturing Managers of Sport Facilities
- Construction Managers of Sport Facilities

- Sport Information and Communication Technology Service Managers
- Retail and Wholesale Trade Managers for Sport Goods
- Sport, Recreation and Culture Centre Managers.

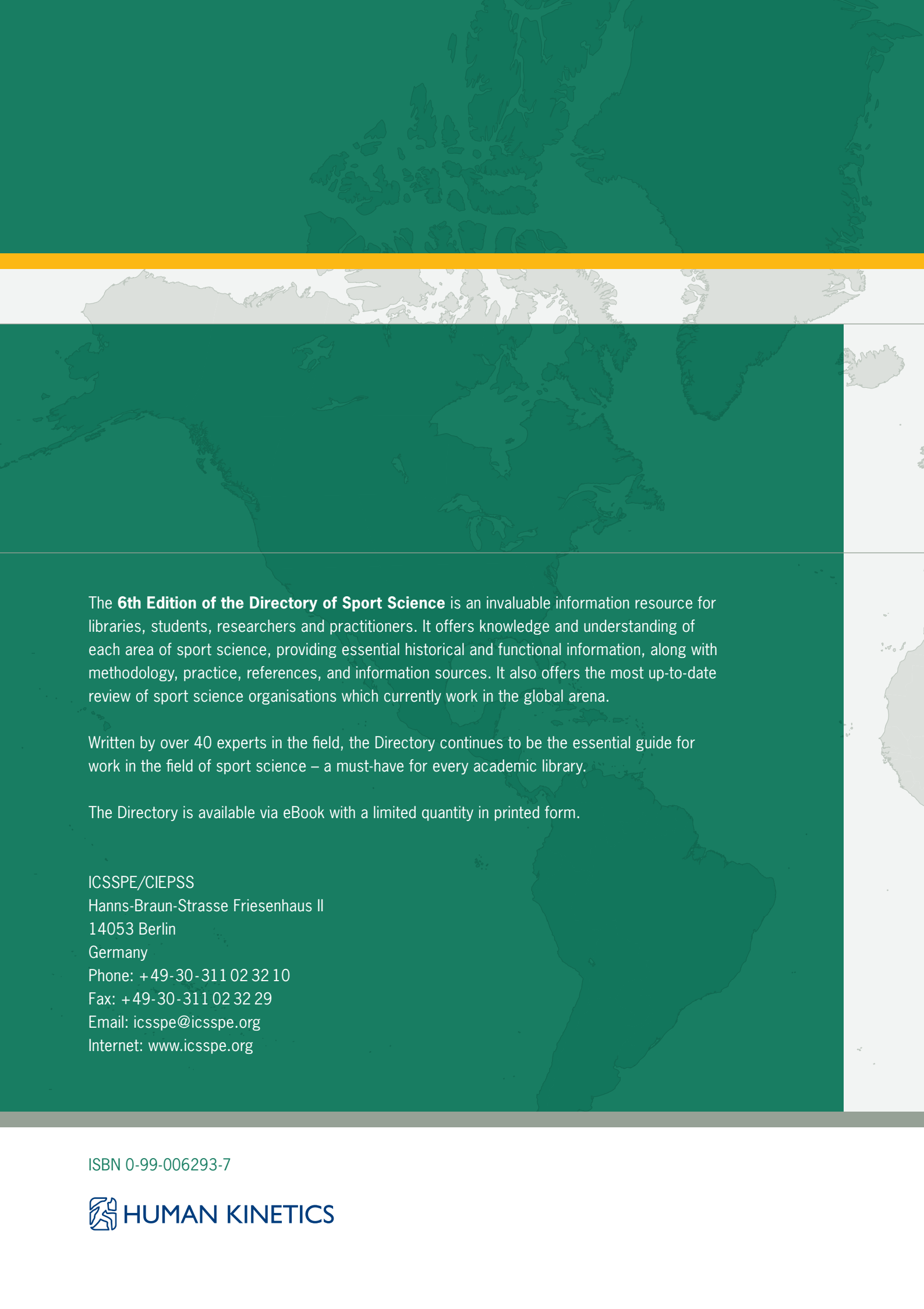
Professionals

- Architects Specialising in Sport and Leisure Facilities
- Sport Medical Doctors*
- College, University and Higher Education Teaching Professionals Specialising in Sport Occupations Training
- Secondary Education Specialist Physical Education Teaching Professionals
- Pre-school and Primary School Specialist (and Semi-specialist) Physical Education Teaching Professionals
- Inspectors of Physical Education
- Accountants in Sport and Sport Related Industries
- Personal and Careers Professionals in Sport and Sport Related Industries
- Business Professionals in the Sport and Sport Related Industries
- Lawyers Specialising in Sport
- Sport Documentalists and Other Related Information Professionals in Sport
- Sport Economists
- Sport Sociologists
- Sport Philosophers, Historians and Political Scientists
- Sport Psychologists*
- Social Work Professionals Related to Sport
- Sport Journalists
- Sport Public Service Administrative Professionals
- Sports Physiotherapists*
- Graphic and Multimedia Designers Specialising in Sports
- Sport Dieticians and Nutritionists*
- Training and Staff Development Specialising in Sports
- Advertising and Marketing Professionals Specialising in Sports
- Public Relations Professionals Specialising in Sports
- Announcers on Radio, Television and other Media.

***Notes:**

Many countries have legislated educational or credential requirements for these occupations. Check with the faculty career advisor for course or programme requirements. For example, the American College of Sports Medicine certify the following:

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- ACSM Health/Fitness Instructor
 - ACSM Exercise Specialist®
 - ACSM Registered Clinical Exercise Physiologist®
 - Physical Therapists /Physiotherapists are also regulated by provincial and state bodies. See:
 - Federation of State Boards of Physical Therapy (US) www.fsbpt.org/
 - Canadian Alliance of Physiotherapy Regulators www.alliancept.org/

A stylized world map in a dark teal color, serving as the background for the top half of the page. The map shows the outlines of continents and major islands.

The **6th Edition of the Directory of Sport Science** is an invaluable information resource for libraries, students, researchers and practitioners. It offers knowledge and understanding of each area of sport science, providing essential historical and functional information, along with methodology, practice, references, and information sources. It also offers the most up-to-date review of sport science organisations which currently work in the global arena.

Written by over 40 experts in the field, the Directory continues to be the essential guide for work in the field of sport science – a must-have for every academic library.

The Directory is available via eBook with a limited quantity in printed form.

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