

**In Search of Academic Identity:
Physical Education, Sport Science and the
Field of Human Movement Studies**

by

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The candidate confirms that the work submitted is his own
and the appropriate credit has been given where reference
has been made to the work of others.

Abstract

This thesis addresses the problem of the academic identity of the area traditionally referred to as physical education. The study is a critical examination of the arguments for the justification of this area as an autonomous branch of knowledge. The investigation concentrates on a selected number of arguments. The data collection comprised articles, books and proceedings of conferences. The preliminary assessment of these materials resulted in a classification of the arguments into three groups. The first group comprises the arguments in favour of physical education as an academic discipline. The second includes the arguments supporting a science of sport. The third consists of the arguments in favour of to a field of human movement study. The examination of these arguments produced the following results. (a) The area of physical education does not satisfy the conditions presupposed by the definition of academic discipline. This is so because the area does not form an integrated system of scientific theories. (b) The same difficulty emerges from the examination of the arguments for sport science. There is no science of sport because there is no integrated system of scientific theories related to sport. (c) The arguments in favour of a field of study yielded more productive results. However, difficulties arise from the definition of human movement. The analysis of this concept showed that its limits are not well demarcated. This makes it problematic to take human movement as the focus of a field of studies. These aspects led to the conclusion that such things as an academic discipline of physical education, sport science and field of human movement studies do not exist. At least, there are not such things in the sense of autonomous branches of knowledge. This does not imply that a more integrated inquiry based on several disciplines is not possible and desirable. This would enable someone entering physical education to find a more organised structure of knowledge with some generally accepted problem situations, procedures and theories on which to base professional practice.

Publications and Presentations

The following publications and conference presentations originated during the production of this thesis.

PUBLICATIONS

- Reppold Filho, A.R. (1998) 'A Educação Física em busca de identidade acadêmica: considerações históricas' (Physical education in search of academic identity: historical consideration). *Anais do VI Congresso Brasileiro de História do Esporte, Lazer e Educação Física*. Rio de Janeiro: Universidade Gama Filho. pp. 65-74.
- Reppold Filho, A.R. (1998) 'Uma análise da literatura referente à definição de esporte' (An analysis of the definition of sport: a literature review). A. Marques, A. Prista, e A.F. Júnior (eds.) *Educação Física: Contexto e Inovação*. Porto: FCDEF, Universidade do Porto. Volume 1. pp. 253-259.
- Reppold Filho, A.R. (1997) 'Notes on the development and prospects of sports in South America'. *Proceedings of the British Olympic Academy*. Loughborough: British Olympic Association.

CONFERENCE PRESENTATIONS

- Reppold Filho, A.R. (1998) 'The emergence and development of the biological model of physical education in Brazil'. *Proceedings of Third Annual Congress of the European College of Sport Science*. Manchester. p. 426.
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To
my grandmother Zita and
my parents Nilza and Alberto

Chapter 1

Introduction

1.1 Preliminary Orientation

In this study we address the problem of the academic identity of physical education. More specifically, we attempt to reconstruct the academic debate on and critically examine the arguments for the justification of physical education as an autonomous branch of knowledge. The study concentrates on a selected, though representative, number of arguments. The aim of this introductory chapter is to present the research problem and the reasons why we believe it deserves academic attention, to describe the research goals and the methodology employed in the investigation, and to outline the thesis structure.

1.2 Posing the Problem

Academics and professionals associated for a significant length of time with the area traditionally referred to as physical education are aware of many instances in which questions arise about its identity. According to a widely accepted view, physical education is undergoing a crisis of identity. In countries so socially, culturally and

economically diverse as the United States, France, Portugal, Belgium, Israel and Brazil, scholars make reference to this fact.¹ There is such agreement about the matter that some scholars have declared that to stress this fact is to do nothing more than to state the obvious.² Despite this general agreement, it is not always clear what people do actually mean when they say physical education is experiencing an identity crisis. This point needs some clarification.

Physical education is a peculiar term, and one of its peculiarities is that it cannot be easily defined.³ It has in fact meant rather different things to different people at different times and in different places. Even in its origins, there is ambiguity about just what it is supposed to be. As we attempt to show later in this study, the disagreement about the nature of physical education is not new. The issue appears in different moments of its historical development and it is a recurrent matter of debate among physical educators. The publications of last century, for instance, presented different characterisations of physical education.⁴ In this century the situation has not changed much. To illustrate the difficulties posed by the term, it seems important to mention here that various academic meetings have been organised with the exclusive aim of identifying the meanings of physical education. This was the case of the National Conference on Interpretation of Physical Education organised in the United States in 1961 and the International Seminar Concepts of Physical Education and Sport Sciences held in Jerusalem in 1974. The results of these meetings were not conclusive and the quest for an adequate definition is still on going. If we concentrate in current common language it is possible to say that the word 'physical education' carries at least four meanings. It refers to:

- (i) a wide range of physical activities such as sports, gymnastics, dance, games and recreation taught to and practised by school children (*stricto sensu*) and wider society (*lato sensu*);
- (ii) a profession, understood as the body of people trained and engaged in organising, planing, teaching, researching and developing the activities mentioned above as an occupation;
- (iii) an academic course in the institutions of higher education whose aims is to train

people for the professional and academic activities described above;

- (iv) a body of knowledge, understood as an integrated system of concepts, theories and procedures originated from the academic attempts to describe and explain one or more aspects of physical education as presented in (i) (ii) and (iii).

Thus when people say that physical education is undergoing a crisis of identity they may be referring to any of the definitions previously mentioned or even employing the word with another connotation. In fact, the interchangeable use of the expression to refer to different things has provoked a great deal of confusion and misunderstandings when discussing the problem. Therefore, it seems important to state from the outset that in this study we are concerned with physical education in the last sense of the term, that is, as it relates to a body of knowledge.

Even within these limits, however, the territory is something of a minefield. Anyone who imagines that the study of physical education at this level will meet with a consensus of expert opinion needs to be promptly alerted. One of the distinguishing features of the area is the absence of agreement about what constitutes its body of knowledge. Even a cursory glance at the area shows that contemporary physical educators are struggling with conceptual problems and difficulties in limiting the focus, boundaries and objectives of the field.

An interesting facet of the problem is that in some places the term 'physical education' itself has been criticised. The expression, it is suggested, is not adequate to identify the academic and professional activities embraced by the area. As a consequence, a range of names have been proposed in substitution.⁵ The diversity of terms used in the last decades has attracted the attention of some scholars. Cagigal (1970) presented a list of 11 terms.⁶ Simri (1978) mentioned the existence of over 60 names, ranging from the common 'sport science' to the most unusual 'gymnology' and 'physactiology'.⁷ More recently, a survey of American universities found more than 100 titles of departments that prepare students in physical education.⁸ Katch (1989) pointed out that 117 names are used to describe the area of study in the United States.⁹ 'Exercise science' and 'kinesiology' are among the terms that have been largely adopted in American institutions.¹⁰ Other expressions such as 'sci-

ence of human performance' and 'human kinetics' have also achieved some degree of recognition.

The same sort of situation is encountered in other countries. In Britain, one finds terms such as 'sport studies' and 'sport sciences'. In the German-speaking countries, the expressions 'sport science' and 'sport sciences' have dominated.¹¹ In the Low Countries, scholars of considerable importance have argued for 'kinanthropology'.¹² The term 'physical culture' is widely used in Eastern Europe.¹³ In Portugal, the name 'science of human motricity' has been adopted in some institutions while others preferred 'sport science'.¹⁴ In the Latin American countries, the word 'physical education' is still the main descriptor for the area. However, in the last two decades other expressions began to appear. In Brazil, for example, scholars have employed 'sport science' and 'human movement science' to refer to the academic field.

Among the reasons singled out for such a situation are the major changes in focus and scope of the profession which have occurred during the last three decades of this century. In the past, physical education was mainly concerned with the preparation of teachers for primary and secondary schools. Currently, a variety of new occupations not connected with school teaching is available. These require a different theoretical basis and technical training.

In some countries the change of name seems to be connected with success in attracting potential students. The term 'physical education' is commonly associated with technical and practical matters. Other titles connoting scientific and intellectual emphasis are desirable because they sound more academic. According to Razor and Brassie (1990), from the 200 institutions that have changed or are considering changing their titles in the United States, 71 (36%) pointed out this factor as the reason.¹⁵

However, for the scope of this study, a more important reason seems to be related to the difficulties of the area in gaining respectability in the academic community. Unlike traditional disciplines that enjoy a respectable place in the curriculum of institutions of higher education, physical education has struggled to justify itself as a branch of learning and research at university level. The absence of a theoretical basis and the fragmented state of the knowledge related to the area are some of the critical points.

These factors, it is suggested, represents a major barrier for the academic recognition of the area.

In recent decades, attempts to overcome this situation have occupied scholars and professionals in several countries. The importance of the issue can be seen by the number of conferences and academic meetings organised at national and international level and the considerable volume of publications focusing on the subject. According to some authors the matter achieved such prominence among physical educators that supplanted the concerns with the recognition of the profession until recently their main preoccupation.¹⁶ In spite of great differences of opinion, most of the scholars share a common belief. For them the problem is not so much to present a satisfactory descriptor for the area, but to find among all those things encompassed historically under the term physical education some sort of common denominator or unified criteria. It is supposed that this would integrate the area into a coherent body of knowledge and lead, as a consequence, to its academic recognition.

Attempts to solve the problem have generated a set of heterogeneous alternatives. Some scholars have tried to show that physical education is an academic discipline while others tried to demonstrate its multidisciplinary or interdisciplinary nature. Those more concerned with the educational dimension of physical education have argued for it as a sub-discipline of education. Others consider the connection to education a limiting factor and attempt to justify it as an autonomous science. Some authors have even employed new concepts to deal with the situation, stating that physical education is a cross-disciplinary field of studies.¹⁷

In the last four decades, some of these views have become highly influential among North American and Western European scholars. Considering the published material, it is possible to say that a substantial number of these views could be organised into three broad groups. The first one holds that physical education is an academic discipline. A number of academics have argued in favour of this position worldwide, specially in North America. The second advocates the existence of a science of sport. In many places academics have adopted this position. However, it is in the German-speaking countries that several studies have been carried out with the

aim of substantiating this idea. The third group argues in favour of a field of human movement study. This view was quite common among British physical educators during the 1970s and early 1980s and still attract the attention of many academics.¹⁸

The adherence of a great number of scholars to the positions just mentioned indicates that they are believed to be the best representatives of the attempts to give scholarly identity to the area traditionally referred to as physical education. In other words, they seem to provide a theoretical framework within which a body of knowledge could be organised.

On the basis of the ideas presented above, we formulated our research problem. The question we addressed in this study is whether there are such things as (a) an academic discipline of physical education, (b) sport science and (c) a field of human movement study. It is our purpose to submit these notions to a critical examination and verify whether they are justified, that is, whether they represent a proper solution to the problem of the academic identity of physical education.

1.3 Research Goals

The aims of this study could be presented as follows:

- to reconstruct the debate about the academic identity of physical education in various countries and its further development into a matter of international concern;
- to identify key ideas and arguments for the justification of (a) an academic discipline physical education, (b) a science of sport and (c) a field of human movement study;
- to critically assess the ideas and arguments mentioned above with the aim to verify whether they represent a proper solution to the problem of the academic identity of physical education.

1.4 Methodological Considerations

In this section we present a description of the methodology employed in the investigation. Since the study is predominantly a philosophical analysis fed by socio-cultural and historical issues, methodological considerations are required with respect to both. The first part is dedicated to the methodological aspects related to the socio-cultural and historical issues. We describe the procedures used in the process of data collection and analysis and provide an elaboration and clarification of the role and philosophical position we take within the thesis with respect to the socio-cultural and historical setting. In the second part, we focus on the methodological aspects related to the philosophical issues. We describe the procedures used to assess the arguments presented in the literature and provide a description of and a justification for the philosophical position we adopt within the thesis.

1.4.1 Historical and Socio-Cultural Approach

In respect to the socio-cultural and historical aspects, the investigation took into consideration the literature published in English, Portuguese and Spanish, and translations into these languages of bibliographical materials made available originally in German and French. These materials included articles, books and proceedings of conferences published at national and international level. The focus was on documents presenting: (a) descriptions and evidences regarding the emergence and development of the problem of the academic identity of physical education, (b) arguments to substantiate the claim that physical education is an autonomous branch of knowledge.

In terms of articles and proceedings of conference, it was necessary to reduce our task to manageable dimensions by sampling from some of the most important national and international publications. The investigation took into consideration 15 journals. The number of journals researched per country is the following: 3, British; 4, American; 3, Portuguese; 1, Spanish; 1, Brazilian; 1, European; 2, International. In Britain, the data collection included the British Journal of Physical Education, the Bulletin of Physical Education and the Journal of Human Movement Studies. In the

North America, the study focuses on the *Journal of Physical Education, Recreation and Dance*, the *Research Quarterly for Exercise and Sport*, the *Physical Educator and Quest*. In Portugal, we concentrated on the *Horizonte*, the *Motricidade Humana* and the *Ludens*. In Spain, the source of reference was the journal *Apunts: Educación Física y Deportes*. In Brazil, we considered the *Revista Brasileira de Ciências do Esporte*. The other journals included were the *European Physical Education Review*, the *FIEP Bulletin* and the *International Journal of Physical Education*.¹⁹ In relation to the materials of conferences, we considered the proceedings of the annual meetings of the *European College of Sport Science*, the *American Academy of Physical Education* and the *Brazilian College of Sport Science*.

Some of these materials were selected because they are the major publications of important academic and professional organisations in their respective countries. Others because they represent international associations of the same kind. We believe that in doing so we ensured that all the relevant positions regarding the matter under investigation were represented in the sample. The research was carried out whenever possible since the emergence of the debate in each particularly country focused on the study and attempted to cover the development of the discussion up to the 1990s.

One part of the materials used in the investigation can be considered sources of primary data since they consist of ideas, views and arguments of the actual participants of the debates on the academic identity of physical education. These transmit first-hand accounts of the situation. Another group of documents can be described as secondary sources. They consist of views of the matter by persons that have not actually participated in the discussions under consideration but whose description is based on the views provided by another source or person.

From the analysis of the written materials, it was possible to reconstruct the history of the problem during the last four decades, finding out what the scholars have said and thought about the matter in different regions and countries. From this previous step, we derived a preliminary classification model for the arguments. These were repeatedly assessed against the literature and modified when necessary. This procedure led to the organisation of the arguments in the three broad groups (a) academic

discipline of physical education; (b) sport science, and (c) field of human movement studies, that constitute the focus of the philosophical investigation carried out in this study.

We are aware that the debate cornering the academic identity of physical education has not been restricted to the written materials that appears in journals, books and proceedings of conference. Certainly, the research in to other types of documents, would throw light on different aspects of the problem that otherwise will still obscure. Similarly, interviews and questionnaires with the protagonists of the debates would also provide relevant information. However, it is important to notice that the main focus of the investigation was not on the historical and socio-cultural aspects of the problem but rather on the philosophical ones. Therefore, even though a more extensive investigation of the circumstances in which the problem emerged and developed and what were the reasons and facts that motivated, and still motivate, academics and professionals to engage in such endeavour is of considerable relevance for the sociological and historical understanding of the problem, in the scope of the study they play an auxiliary role, since what is under examination here are the philosophical strengths and weakness of the arguments for the justification of physical education as an autonomous branch of knowledge.

Having said that, we must now consider the role the socio-cultural and historical setting plays in the investigation. Its function was to create a sociological and historical framework to understand the views and arguments presented in the written materials by several scholars. In doing that our intention was to introduce a clear and direct interplay between the historical and socio-cultural aspects of the problem and the philosophical ones, something that in our point of view was missing in other studies. Fundamental was the conviction that in looking at the evolution of the debates on the matter we would better understand the reasons why physical educators and other people working in this area have engaged in the effort of giving to it an academic identity. In these terms, we are in agreement with those who believe that the knowledge of the history of physical education and sport is not simply valuable for the light it throws on the past. It is important because it helps us to understand the present situation.

Moreover, the preliminary review of the literature provided indications that the present-day academic debate on the identity of physical education involves a wide range of social and political interests. Since the studies of historians, sociologists and philosophers of science validated the idea that social and political interests play an important role in the academic debates, to neglect such interests in the context of this investigation could lead us to build a distorted view of the situation.²⁰ In addition, at that point our knowledge of the social and political aspects of the problem was rudimentary and we want to know more about them and the way they interfered in the situation. For this reason, the first step was to reconstruct the social-cultural and historical context in which the debates occurred.

Finally, we want to focus on the philosophical position we took within the thesis with respect to the socio-cultural and historical setting. Our position was to value the cultural differences in the understanding of the problem. We are aware that every culture is based on its own set of values and beliefs and because of that they cannot be completely understood using the set of values and beliefs of other cultures. For this reason, it is difficult to establish a criterion to compare cultures, societies and historical settings. The attempt to do such thing faces the problem of incommensurability posed by social anthropologists and philosophers that argue in favour of cultural and epistemological relativism. According to this view, two cultures or theories are incommensurable when we cannot subjected their set of beliefs and achievements to a common measure.²¹ This suggests that a cultural system or any part of it can only be evaluated and understood on its own terms. On this basis, what we tried to do was to highlight the distinctive forms and significance that the search for the academic identify of physical education assumed in different societies and historical moments. In this terms, our philosophical position do not support the attempt to build a theory that is able to give an account of the matter that embraces societies that are in some cases so geographically, temporally and culturally apart from each other.

However, in admitting that there is a range of local elements that play a significant role, we are not arguing in favour of a relativistic position. We believe that even respecting the peculiarities of each society, culture and historical moment there we could find some similarities in the way physical educators and other people working

world-wide are dealing with the problem of the academic identity of the area. Therefore, we also tried to highlight these common features and, in some extension, to show their connections and relationships.

1.4.2 Philosophical Approach

The philosophical approach used to assess the arguments for the justification of physical education as an autonomous branch of knowledge may be described in the following way. First, we tried to get clear on what the question was asking. Second, we considered three possible solutions to the problem of the academic identity of physical education as mentioned in the section above. Then we submitted these solutions to a critical examination, that is, we asked questions in favour of and against the arguments put forward by different scholars and examined whether they were adequate in proving their points.

In doing that we attempted to follow a certain way of doing philosophy that is in consonance to what most contemporary philosophers would call, on some broad specification, analytical. In contrast to those attempts to build all inclusive explanations, usually referred to as synthetic, philosophical analysis is concerned with arguments and justification, with the reasons for accepting or rejecting a philosophical position.

This type of philosophical approach finds support in the work of many contemporary philosophers. Gensler (1998), for instance, describes it in the following terms,

‘We first try to get clear on what the question is asking. Then we consider the range of possible answers. We criticise each one as brutally as we can, trying to uncover problems; and we eliminate views that lead to absurdities. We look for the most adequate of the remaining views. If we cannot completely resolve the issue, at least we can hope to arrive at a well thought-out answer.’²²

In the same line, Raphael (1994) argues that the original function of philosophy is the critical examination of assumptions and arguments. For him, every cultural

group or society tends to take for granted a certain number of beliefs. The task of philosophy is to evaluate whether there are good reasons to follow such beliefs. If we find there are adequate reasons, then we may continue to hold them but now with rational assurance. Otherwise, we should either search for a new framework of belief or suspend the judgment.²³

Another important aspect to refer is that the clarification of meaning also played an important role in the methodological approach adopted within the study. In this respect, we attempted to solve some problems by the clarification of the meaning of such expressions as: academic discipline, sport and human movement.

This position is also supported by some contemporary philosophers. According to Rafael (1994), the question of whether there are good reasons for accepting or rejecting a philosophical position takes us to questions of meaning as, for example, when we ask what is meant by a good reason. Therefore, philosophy is also concerned with the clarification of meaning.²⁴

Westfal (1998) also follows this orientation when he claims that the aim of philosophy is to resolve those problems 'which depend on the analysis of the basic concepts in the propositions in which they are stated'.²⁵

For the adoption of this philosophical approach in the area of physical education, the work of Best (1978) is of great importance. He states that a contribution of philosophy to the study of human movement would be the logical examination of some statements about the activities concerned.²⁶

According to Best,

'If one had to describe them very concisely one might characterise the methods of philosophy as consisting in criticism and clarification, tracing out the logical consequences of what people say, and revealing the logical structure of language'.²⁷

We believe that the description and justification presented above are sufficient to substantiate our claim that the philosophical approach adopted within this thesis is

in agreement with what a certain number of contemporary philosophers take as the task of philosophy, namely, the critical examination of arguments, justification and clarification of meaning.

However, before we close this section, a last word is necessary in respect to the philosophical position we assumed in this study. It is important to say that in adopting such philosophical approach we are not saying that we agree with those scholars who argue that this is the only way of doing philosophy. In fact, we do not believe that there is such thing as ‘the philosophical method’. In this respect, we are in agreement with those that say that there are no specific techniques to tackle discrete philosophical problems with definite results. Neither are we claiming that the clarification of the meaning of words is the only task of philosophy. Regarding this matter, we are in agreement with Popper (1992). According to him, to understand the functions of our language is an important part of philosophy. However, to consider that the meaning of the words is the only or even the main purpose of philosophy is a mistake.²⁸

1.5 An Overview of this Study

The study comprises this introduction and five chapters.

Chapter 2 provides a historical overview of the search for the academic identity of physical education in various countries and follows its development into a matter of international interest. It traces its path from the end of the last century following its evolution to the early years of 1990s. The chapter tries to demonstrate how changes in the nature of physical education shaped current debates on its academic identity. This part of the study is divided into four sections each of them draws attention to a particular socio-cultural and historical context.

Then follow Chapters 3, 4 and 5, each of them focusing on a particular topic. These chapters are organised in such a way as to critically examine individual thesis. They occasionally overlap with the historical overview presented in Chapter 2, but this allows each part to stand independent of the rest of the study.

Chapter 3 considers the attempts of North American scholars, especially in the United States, to justify an academic discipline of physical education. The chapter is divided into three sections. In the first one we introduce the problem and the way it is investigated through the chapter. In the second part, attention is directed to the concept of academic discipline. The final section makes a description and a critical examination of the main arguments to substantiate the claim that physical education is a cross-academic discipline.

Chapter 4 examines the arguments for the justification of a science of sport. It focuses mainly on the views of German scholars. The chapter comprises four parts. The first one poses the problem and describes the manner we intent to deal with it in the context of this study. The second looks at the criteria of demarcation between science and non-science. This section is followed by an analysis of the concept of sport drawing special attention to the debate between essencialists and non-essentialists on the nature of sport. The final section considers the justification of sport science based on the conceptual framework built on the previous parts.

Chapter 5 is concerned with the justification of a field of human movement studies. It concentrates mostly on the arguments put forward by British scholars. As a preliminary step to the analysis of these arguments, the concepts of field of knowledge and form of knowledge are discussed. The chapter closes with an assessment of human movement as the focus for a field of study.

Finally, Chapter 6 presents a summary of the overall final position that can be drawn from the previous chapters, makes a comparison of this position to others in the current literature, reflects on the merits and weakness of the study, describes the specific position we have now arrived and considers the professional implications of the work.

Notes

¹Regarding the crisis of identity of physical education see W.P. Fraleigh (1966) 'The perplexed professor', *Quest*, 7:1-13; H. VanderZwaag (1973) 'Sport studies and exercise science: philosophical accommodations', *Quest*, 20:73-78; P. Parlebás (1987) *Perspectivas para una Educacion Fisica Moderna* (Perspectives for a Modern Physical Education). Málaga: Universidad Internacional Desportiva de Andalucia; J.P.S. Medina (1983) *A Educação Física Cuida do Corpo e Mente* (Physical Education Deals With Body and Mind). Campinas: Papirus. pp. 7-8; R. Park (1987) 'The future of graduate education in the sociocultural foundations: history', *Quest*, 39(2):191-200; and R. Renson (1989) 'From physical education to kinanthropology: a quest for academic and professional identity', *Quest*, 41(3):235-256.

²R. Park (1987), *op. cit.*, p.191.

³For more on this topic see L.J. Huelster (1965) 'The body of knowledge in physical education: philosophical', *Physical Educator*, 22(1):6-8.

⁴See R. Park (1981) 'The emergence of the academic discipline of physical education in the United States'. in G.A. Brooks (ed.) *Perspectives on the Academic Discipline of Physical Education*. Champaign: Human Kinetics.

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⁷U. Simri (1978) 'The variety of concepts of physical education and their influence on the objectives of physical education', *FIEP Bulletin*, 48(1):11-16.

⁸C.B. Corbin (1990) 'The Evolving Undergraduate Major.' in C.B. Corbin and H.M. Eckert (eds.) *The Evolving Undergraduate Major*. Champaign: Human Kinetics. p. 3.

⁹F.I. Katch (1990) 'Reponse to Franks' Paper.' in C.B. Corbin and H.M. Eckert (eds.) *The Evolving Undergraduate Major*. Champaign: Human Kinetics. p. 54.

¹⁰Arguments in favour of kinesiology may be found in K.M. Newell (1990) 'Kinesiology: The label for the study of physical activity in higher education', *Quest*, 42:269-278; and W.J. Vincent (1991)

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¹⁴M. Sérgio (1986) *Motricidade Humana: Uma Nova Ciência do Homem, Desporto e Sociedade*. (Human Motricity: A New Science of the Man, Sport and Society) Lisboa: Direção Geral de Desportos.

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¹⁶S. Ross (1978) 'Physical education: a pre-discipline in search of a paradigm', *International Journal of Physical Education*, 15(2):9-15.

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¹⁹The list below provides information about the title, volume, issue and date of the journals researched and makes reference to the missing ones when necessary. In Britain: *British Journal of Physical Education*, 1(1),1970 to 24(3),1993; *Bulletin of Physical Education*, 1(1),1945 to 28(2),1992; *Journal of Human Movement Studies*, 1(1),1975 to 23(2),1992. In North America: *Journal of Physical Education, Recreation and Dance*, 49(1),1978 to 65(2),1994; *Quest*, 1(1),1963 to 45(3),1993, missing: 2(3),1990; *Research Quarterly for Exercise and Sport*, 1(1),1930 to 65(1),1994, missing: 43; *Physical Educator*, 22(1),1965 to 50(1),1993 and (2 and 4, 1956) (2, 3 and 4, 1955) (1 and 2, 1954). In Portugal: *Horizonte*, 1(1),1984 to 11(62),1994; *Motricidade Humana*, 1(1),1985 to 10(2),1994; *Ludens*, 1(4),1977 to 14(1),1994; In Spain: *Apunts: Educación Física y Deportes*, 1, 1985 to 38, 1994; In Brazil: *Revista Brasileira de Ciências do Esporte*, 1(1),1978 to 15(2),1994; European: *European*

Physical Education Review, 1(1),1978 to 16(2),1993; International: *FIEP Bulletin*, 40(1),1970 to 61(3),1991/92, missing: 41(1,2,3), 58(1) and 61(1,2,4); *International Journal of Physical Education*, 10(1),1973 to 30(3),1993.

²⁰For the role played by social and political interests in the academic debates see A. Chalmers (1990) *Science and its Fabrication*. Milton Keynes: Open University Press; P. Feyerabend (1993) *Against Method*. London: Verso; T.S. Kuhn (1970) *The Structure of Scientific Revolutions*. 2nd ed., Chicago: University of Chicago Press.

²¹For the notion of incommensurability see P. Feyerabend (1993), *op. cit.*, pp. 211-213; T.S. Kuhn (1970), *op. cit.*; R. Harré and M. Krausz (1996) *Varieties of Relativism*. Oxford: Blackwell. pp. 79-82.

²²H.J. Gensler (1998) *Ethics: a Contemporary Introduction*. London: Routledge. p. 2.

²³D. Raphael (1994) *Moral Philosophy*. Oxford: Oxford University Press. pp. 1-3.

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²⁵J. Westfal (1998) *Philosophical Propositions*. London: Routledge. p. 2.

²⁶D. Best (1978) *Philosophy and Human Movement*. London: George Allen and Unwin. p. 5.

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Chapter 2

In Search of Academic Identity

2.1 Introduction

This chapter is intended as a general introduction to the problem of the academic identity of physical education. The analysis of the literature showed that there is an abundance of materials in periodicals, books, brochures and proceedings of conferences and symposiums dealing with this problem. Through a critical examination of a selected number of these materials, we attempted to bring together some of the main views about the subject, paying special attention to those that appeared in publications during the last four decades.

Two major questions are dealt with in this chapter. First, how scholars formulated the problem, and second, how they tried to solve it. The chapter is organised in such a way to provide elements to understand the historical context of where the problem emerged and developed and the reasons why it became an important topic on the agenda of scholars.

An introduction of this kind raises some methodological questions. It is necessary to demarcate the limits of the investigation in time and space. In the case of this study, it is difficult to be precise about when the concern with the academic identity of

physical education appeared for the first time. A number of events could be identified as starting-points, having arguments to substantiate many of them. Looking at the literature, it is possible to discern some important periods in the history of the issue.

The search for the academic identity of the area can be traced back to at least the first decades of last century when physical education began to establish itself as a profession and the first efforts to give scientific treatment to the field took effect. In a period when the first professional training courses began to flourish in Europe, physical education was barely seen as a scientific matter and had to rely heavily on the scholarly achievements of other areas. In 1814 the Royal Central Institute of Gymnastics was opened in Stockholm. There Per Henrik Ling (1776-1839) developed his theory of gymnastics that became known world-wide as the Swedish System. This was one of the first modern attempts to scientifically investigate physical education.¹

It would scarcely be correct to say that there was a clear formulation of the problem and an organised effort to reach a proper solution to it at that time. There is some indication, however, that the identity of the area was then a subject of concern among scholars. For instance, Renson (1998) brought into prominence the work *Cinésiologie ou Science du Mouvement* (Kinesiology or Science of the Movement) of the French scholar Nicolas Dally published in 1857. In that study, the French argued in favour of a science of movement which he named kinesiology.²

The study of Park (1981) presents evidence to substantiate the claim that the pre-occupation with the academic identity of physical education was already in existence at the end of 19th century.³ The most relevant seem to be the discussions about the scientific status of the area among the members of the American Association for the Advancement of Physical Education in the United States. According to the author, Thomas Wood declared at the 1894 annual meeting of the Association that the name 'physical education' was so misleading that another should be found. He proclaimed the need for a science of physical training. On the basis of studies about the emergence of physical education as an academic discipline, Park argues that the broad outlines of what might be called the disciplinary direction of area could be discerned as early as the 1890s.⁴

In the decades that follow, the specialist colleges of physical education responsible for the training of several generations of professionals did not create a tradition of scientific research. Most of the scientific-orientated courses were still based on established disciplines such as physiology, anatomy and anthropometry and taught by staff that received training mainly outside physical education.⁵

In this period, several physical educators expressed concern with the academic identity of the area. There are studies showing that on many occasions the subject was mentioned in academic and professional meetings. Park (1980) for example, pointed out that the American physical educator, C.H. McCloy, declared that for physical education to become a more mature science it should develop scientific research.⁶ This sort of manifestation could well be characterised as the initial point of the search for academic identity. There is no evidence, however, that at that time scholars had a long term commitment to finding the solution to the problem. In addition, we did not find any reference to published materials of that period giving scholarly treatment to the topic.

In the middle of this century, the majority of the university degree courses that appeared world-wide were under the jurisdiction of or closely connected to departments of education, medicine and biological sciences. This situation played an important role in the scientific development of physical education. However, it also brought some difficulties. The area was not able to enjoy the necessary freedom to investigate relevant issues according its own scientific interests. As a peripheral part of these departments, the investigation of problems related to physical education received scant attention. The links to educational matters led scholars to direct a great deal of time to problems of the practice of the profession leaving aside the concerns with basic research.

The 1960s marked a shift in the situation. The interest in the area started to increase dramatically. A wide range of disciplines were focusing on aspects of physical education on a regular basis. The notable developments of the scientific disciplines which the area used to draw on were provoking increasing specialisation and differentiation. The use of theories and empirical methods of disciplines such as physiology,

psychology, biomechanics, history and sociology had enlarged the understanding of several dimensions of physical education. A number of international and national societies and journals dealing with particular problems and areas of interest had been created.⁷ It was a period when most of the now recognisable sub-disciplines within physical education emerged. The benefits of such a situation were enormous. However there were also some side effects, among them the increasing fragmentation of the knowledge about physical education.⁸

In this context, the search for academic identity of the area started to receive attention in the work of scholars, especially in the former East Germany and North America. There the studies of Erbach (1964, 1966) and Henry (1964) gave grounds for systematic investigations on the subject.⁹ The ideas of these scholars influenced academics at home and abroad and had a great impact on the development of the debate world-wide. The problem has been a major concern of the academic community since then.

The writings of these scholars established a fine demarcation line between a period of quasi-isolated concerns and a period of systematic attempts to give scholarly identity to physical education. Considering the purpose of this study and the broad description presented up to this point, we assumed that the works of these scholars provide a fruitful starting-point for the problem under investigation here. Therefore, the time limits of this investigation are set in the early 1960s and follow the path of the discussion up to the 1990s. We notice, however, that we are not strict on this matter. Ever we feel the need to give accounts of the previous historical periods in order to examine certain ideas and events we do so.

In terms of geographical limits, the views investigated in this study are closely connected to the search for the academic identity of physical education in the United States, Germany and Britain. In these places, the concepts 'academic discipline of physical education', 'sport science' and 'field of human movement studies' originated and developed respectively. Therefore, attention is mainly directed at them.

However, the analysis of the literature showed that preoccupation with the academic identity of physical education has not been restricted to them. In the French speaking

world, Le Boulch and Meynard published studies on the topic by the middle 1960s.¹⁰ In the follow decades, works focusing on the subject appeared in the Low Countries, Spain and Portugal. There is evidence to suggest that more recently physical educators in South America have also been interested in the topic.

As we show later in the chapter, some countries have been influenced by the ideas of the German, American and British scholars examined in this study while others have taken different directions. Although this work centres on the ideas and arguments developed mainly in the three regions mentioned above, it seemed important to extend this introduction beyond their boundaries and trace the path of the debate in other places as well. This, we believe, enables a more complete map of the problem of academic identity of physical education to be drawn and provides information about its evolution from the concerns of particular professional and academic communities to the international ones. For this reason, this chapter also deals with the search for the identity of physical education in other European and American countries.

2.2 The North American Approaches

In North America, the academic identity of physical education has been concerning scholars and professionals for several decades. The ideas that shaped its current state appeared in the early 1960s. The paper *Physical education: an academic discipline* delivered by Franklin Henry during the 67th Annual Conference of the National College Physical Education Association for Men in 1964 is considered to be a landmark in the history of these concerns.¹¹

The arguments presented in that article had a sound impact not only on theoretical but also practical matters and marked a significant departure from the attempts to establish physical education as an academic discipline in North America.¹² In spite of some previous efforts to solve the problem, it was after Henry's paper that the question became a major focus of attention among American physical educators. An examination of the literature showed that a considerable number of papers and books have been published, both criticising and supporting the author's views. In great

extension his ideas influenced the work of people in other countries as well. This influence can be assessed by the considerable amount of international scholars who quote his famous study.¹³

Henry's article and the massive interest it attracted did not appear in a vacuum. They were deeply rooted in the historical tradition of North American physical education. The examination of the historical development of the field, particularly in the United States, shows that preoccupation with its academic dimension was present there in an embryonic state since the end of last century. Some observations about the evolution of physical education in that country will help to illustrate this point.

North American physical education hosted a wide range of interests since the very beginning. Historians of the field have argued that the people that gathered under the designation physical education were so diverse in interest that it seemed to be impossible to achieve a harmonious relationship among them.¹⁴ The initiators of physical education in that country were people with various professional orientations and backgrounds including several medical doctors and educators. These individuals had different perceptions about the future of the area. Their conflicting views generated problems regarding the focus of the area. Some of them linked physical education to education while others connected the area to medicine and biological sciences. In the same way the dichotomy practical versus academic had its effects on the formation of American physical education. Some were concerned with the professional dimension of physical education while others concentrated attention on its scientific development.

At this early stage, the majority of physical educators concentrated efforts towards the recognition of the profession. The adoption of physical education by public schools was a major topic on their agenda. The training of teachers and the various systems of gymnastics were also in evidence.¹⁵

At that period, the scholarly dimension of the area did not enjoy the same popularity among the community of American physical educators. However, there was evidence that a number of important scholars were concerned with the matter. For example, George Fitz, the first editor of the *American Physical Education Review*, the journal

of the American Association for the Advancement of Physical Education (AAAPE), often criticised in his editorial notes and comments the lack of scientific grounds of the area. For him the recognition of physical education as a profession was linked to its scientific development.¹⁶

The duality between the professional and academic orientations is noticeable on other occasions. In the 1920s most colleges and universities had as their primary, not to say exclusive, focus, the preparation of physical education teachers. These courses promoted the learning of gymnastics and with the popularisation of sports those were also included in the curriculum. Kroll (1982) argues that while in 1908 almost two-thirds of all directors of the college physical education departments possessed a medical degree, in decades that follow this number dropped to 7 per cent. They were replaced by people competent in athletics regardless of their area of academic preparation. Physical education was viewed as a practical pursuit. Such a situation posed strong obstacles to its admission as an academic subject in institutions of higher education.¹⁷

In 1930 the American Physical Education Review merged with another magazine, *The Pentathlon*, to form the *Journal of Health and Physical Education*. This new journal was concerned with a wide range of non-technical issues and directed at professional members. In the same year, a second periodical, *The Research Quarterly* was launched by the AAAPPE. This journal was created with the aim of attending those members engaged or interested in research. It published scientific articles and technical materials.

In 1935, the situation of physical education was very confused. Blanch Trilling summarised the situation. He pointed out that the area had become interested in so many different things that it was becoming difficult to understand in what direction it was going.¹⁸

More examples could be added to substantiate the claim that since its early stages American physical education embodied problems of identity that would affect its recognition as an academic discipline. Yet there are other events that exerted a more direct influence on Henry's paper and the interest it attracted from other scholars.

In the late 1950s and early 1960s, American institutions of higher education underwent several changes. This emerged as a consequence of the pressures to increase the quality of the university courses.¹⁹ In particular, the graduate programs in physical education came under severe criticism. These courses were condemned for being simply continuations of the undergraduate teacher preparation. The lack of intellectual emphasis and scientific background were the main causes for such criticism.

The publication of Conant's study, entitled *The Education of American Teachers*, provoked turmoil among American physical educators. In this book he stated that if he wished to portray the education of teachers in the worst terms, he would quote from the descriptions of some graduate courses in physical education. In his opinion, universities should cancel graduate programs in this area.²⁰

Another event of major importance was the passage of the Fisher Bill concerning the revision of school teacher certification. According to some authors, the real impetus for moving towards an academic discipline came from the embarrassing position that the profession was forced into during the Fisher Bill deliberations in 1961.²¹

At that time, there were concerns about the poor academic preparation of school teachers and doubts about the importance of some required courses in education. Physical education, music and vocational education were subjects of great public attention. The idea was to improve academic excellence in public schools. A crucial point in this legislation was the definition of academic subject matter. Among the criteria suggested in order to qualify as an academic subject was the emphasis on research and intellectual development. Under the conditions of this legislation, a degree in an academic subject was a necessary condition to receive teaching credentials. Physical education was classified as non-academic. Such a classification was considered to be a decrease in the status of the profession and had a great impact upon the thinking of American physical education leaders.

The strong criticism of the lack of intellectual content and the dubious academic status of the area at university level provoked reactions from the American physical educators. The dominant idea was to move from the professional training emphasis to a scholarly one. There was an important distinction between these two orientations.

The latter involved inquiry about basic problems related to physical education while the former was concerned with solving problems of the everyday practice of teachers and coaches. This led some prestigious scholars and physical education organisations to join efforts in an attempt to give more academic credibility to the area.

From 1962 to 1965 the American Academy of Physical Education examined the problem of the academic identity of physical education.²² After a period of preliminary debate the members of the Academy pointed out the need for a more systematic study on the topic. A conference was organised with the aim of considering the matter in depth. The conference was held in 1965 and recommended a large-scale research project to help with the solution to the problem. The definition of the body of knowledge of physical education was one of the main goals.

At the same time, the Western Conference of Physical Education Directors (WCPED) chose the theme *The Body of Knowledge in Physical Education* for its annual conference in 1964. The WCPED comprised the ten biggest universities in that area.²³ The topic had already received attention in previous meetings. These efforts generated attempts to organise the academic content of physical education. In 1966, the Big Ten defined six areas of specialisation as follows: exercise physiology; biomechanics; motor learning and sports psychology; sociology of sport and physical education; history, philosophy and comparative physical education and sport; administrative theory.

As the decade progressed, more people began to pay attention to the problem. The concern with turning physical education into a more intellectual than physical oriented subject appeared in Blackenbury's paper published in 1963. For that author, all education is basically intellectual in character and if physical education wanted to rank as education it should emphasise its intellectual dimension. Blackenbury then goes on to examine the ways physical education was taught and the dualistic assumption that gives support to the idea that it is concerned solely with the body. For him, there is no such division as mind and body. Therefore, monism and not dualism is the philosophical basis for physical education. As a conclusion, he states that it is possible for physical educators to go beyond training students to perform skills. In his opinion teachers in this area can also give to their classes some intellectual

challenge.²⁴

In the same year, a book focusing on the subject was published by Brown and Cassidy.²⁵ In this study, the authors attempted to formulate a theory of physical education. An examination of that work makes it evident that it was not only scientific factors that gave motivation to their ideas. Alterations in the American universities and criticism of physical education also played an important part. They make this point clear in several sections. Another aspect worth mentioning is that the book started to be written in 1958. At that time, the Department of Physical Education at the University of California in Los Angeles was working on the clarification of the body of knowledge of physical education. As members of that department, the authors were aware of the difficulties faced by the area. They recognised that the participation in that working group exerted some influence in the organisation of the book. Among the problems they were concerned with was the definition of the field of knowledge of physical education. This issue was of the greatest importance to them. They stress this concern in the following way: ‘the most crucial, the most urgent need in the field now called physical education is a clear view, in depth, of our educational discipline’.²⁶

The problem of the academic identity of physical education also attracted the attention of two important organisations, the National Association for Physical Education of College Women (NAPECW) and the National College Physical Education Association for Men (NCPEAM). The Quest, their scientific journal, dedicated an issue to the topic in 1964. The spring number appeared with the title *The Art and Science of Human Movement*.²⁷ The issue centred on human movement as the subject of inquiry of physical education and included articles dealing with the meaning of movement and related aspects.

Among the articles, the study of Abernathy and Waltz (1964) is the most important for the topic under examination here.²⁸ In that paper, rather than defining a discipline of physical education, the authors suggest a way of looking at its subject of inquiry. They argued that the word ‘physical education’ is not adequate for a discipline. Instead the term ‘human movement’ should be used. The latter establishes clearer

parameters for the field and identifies accurately its focus of concern.

Another important aspect of the work of these scholars is that the terms 'physical education' and 'human movement' are not synonymous. The first denotes an applied field. It is viewed in relation to school programs where movement is used with educational goals. The second is concerned with the inquiry on the phenomenon of human movement beyond the limits of school. The understanding of this phenomenon is related to the findings in allied fields. However, the area will only establish its identity when it is able to play a critical role in the comprehension of the human movement. The authors claim that this is achieved through an organised inquiry into that domain.

As we could see, there was increasing involvement of scholars and scientific organisations in the debates concerning the academic identity of physical education in the early 1960s. At that time, there was a positive environment for the advancement of ideas related to that matter. American physical educators were looking for a solution that could lead to the scholarly recognition of the area.

This seems to be the appropriate scenario to understand the success of Franklin Henry's article published in 1964. As mentioned earlier in this section, that paper attracted the interest of a considerable number of North American physical educators. Among the various reasons for its acceptance, the most important seems to be that Henry presented a theoretical framework around which scholars could gather to debate the issue. Considering the influence of Henry's paper on many arguments examined in this study, a detailed description of the ideas presented there are in order.

In that study, Henry tried to demonstrate that there is indeed an academic discipline of physical education. He argued that the criteria for deciding whether the area is an academic discipline is external instead of internal to physical education. In his understanding, to achieve scholarly recognition it is necessary for physical education to fulfil the requirements for an academic discipline set out by the university.

He defines academic discipline as an organised body of knowledge whose content is theoretical and scholarly. The acquisition of such knowledge is a worthy objective in

itself. According to him, this definition is a synthesis of several found in lexicons and the one that is probably acceptable to most institutions of higher education.²⁹

With this definition, Henry moves in the direction of justifying physical education as an academic discipline. For him, physical education cannot be a simple composition of traditional disciplines. This is so because the areas within these disciplines that are vital to physical education receive only haphazard and peripheral treatment in them. The integration of the knowledge related to the area would not be guaranteed even if these disciplines are brought together. He illustrates this point by saying that an undergraduate or graduate major cannot be made up solely of a group of courses selected from offerings within the traditional disciplines. There are other areas to be included such as body mechanics, motor learning, the role of dance and physical activities in culture, among others. Physical education is not a point of application of other disciplines either, though it has to do with some of their aspects.

An important point in his argument is that physical education is a special type of discipline. What is peculiar about the area is that it is composed of certain portions of such diverse fields as anatomy, physics, physiology, cultural anthropology, history, sociology and psychology.³⁰ For this reason we cannot say that it is a discipline like biology or physics.

According to Henry, the expression 'cross-discipline' is the one that best describes the scholarly nature of the area. If physical education is structured in this way, it can meet the requirements for an academic discipline set out by the above definition. In this paper the author did not offer a clear definition of this concept. However, we may infer from some examples that the traditional disciplines approach the problems related to the area longitudinally whereas physical education offers a cross-sectional look at them.

The focus of attention of the discipline is on the

‘study of man as an individual, engaging in motor performances required by his daily life and in other motor performances yielding aesthetics values or serving as expressions of his physical and competitive

nature, accepting challenges of his capacity in pitting himself against a hostile environment, and participating in the leisure time activities that have become of increasing importance in our culture.’³¹

The concept of cross-disciplinary fields of study received special attention in a second paper published in 1978.³² In that study the focus of physical education is exactly the same as that described in 1964. Henry, however, elaborates on the arguments presented there. The author defines cross-discipline as a series of courses organised horizontally as well as vertically. The concept refers to the appropriate part of a body of knowledge from another discipline that is related to the academic and scholarly aspects of physical education. In this paper he emphasises that providing that we organise the body of knowledge of the area in this way, we can justify a discipline of physical education.

As we see later in this section, the ideas of Henry provoked criticism from other sectors of the profession. He was accused of increasing the gap between the professional and academic dimensions of the area. Several studies appeared criticising his views. However, many scholars and organisations took his ideas as positive and attempted to develop them.

Attempting to avoid the disparity between professionals and academics, Fraleigh (1966) developed an alternative model to deal with the problem of the identity of physical education.³³ He proposes three types of disciplines: academic, professional and functional. The academic is theoretical and conceptual in nature. It is composed of content, structure and method of inquiry. The function of an academic discipline is to investigate and understand the portion of reality it defines for itself. The focus of this discipline would be on the phenomenon of human movement. The professional discipline is concerned with the process of education. The content is selected according to the practical necessity of the time since it relates to some particular context. For the same reason, the structure is relatively undefined. A professional discipline has to be dynamic to meet the social requirements. The functional discipline in its turn attempts to take knowledge from several disciplines and apply them to human movement with the aim of attaining some physical development. The author men-

tions as examples strength and endurance among others. It seems that the idea of the author is of a discipline concerned with the acquisition of physical skills or attributes. For the author, attempts to mix these types of disciplines at the same time generate problems of identity.

In 1967 the journal *Quest* dedicated another entire issue to the problem of the academic discipline of physical education. Several articles focusing on the topic from different perspectives were presented under the title *The Nature of a Discipline*.³⁴ The editor draws attention to the importance of the topic for the academic community of physical educators. The issue comprises eight articles written by scholars of recognised expertise from inside and outside physical education. The first two papers deal with knowledge and the organisation of disciplines in general.³⁵ They are reproductions of material published previously in the field of philosophy of education and express the interest of physical educators in keeping in step with the debate occurring in other areas.

The paper of Phenix (1967) seems to be of particular importance in understanding the difficulties faced by to physical education in the organisation of academic disciplines.³⁶ The author argues that a generic classification of disciplines can be made on logical grounds. For him, the analysis of the logical characteristics of knowledge shows the existence of nine generic classes. To arrive at this classification, he divides knowledge primary into two dimensions: extensional and intensional. The extension has three degrees that he calls singular, general and comprehensive. These notions refer respectively to knowledge of one thing, a selected plurality of things and of a totality. According to the author, intensions are also of three kinds: fact, form and norm. The pairing of the three extensional degrees with the three intensional qualities generates nine classes of knowledge.

Some examples may help to illustrate how the author conceives these classes of knowledge. The pairing of 'singular' and 'fact' produces what the author classifies as the most elemental kind of knowing. That is to say, the knowledge of a singular fact as in the case of the immediate awareness of the self or another being. The disciplines that are concerned with the knowledge of singular facts are philosophy, religion and

psychology in their existential aspects. The knowledge of general fact is the province of empirical disciplines. These disciplines aim to understand the selected plurality of things. They look for generalisations that unite many particulars. This is the case of physical sciences, life sciences and social sciences.

Physical education does not meet the requirements of any of these classes of knowledge. There is a possibility in the knowledge of singular forms. This class constitutes the realm of aesthetic meanings. For the author, disciplines such as music, visual arts, literature and the arts of movement are related to this class of knowledge. We may conclude that dance and other forms of body expression belong to this domain. Perhaps games and some kinds of sports could also be included here. However, in general, physical education seems to be excluded from the classes of knowledge proposed by this author. Taking into consideration that Phenix was an eminent scholar in the field of philosophy of education, his ideas undermined the aspirations of some physical educators to establish an academic discipline.

In terms of amplification of the ideas presented up to that point, the most important contribution seems to be Rarick's paper.³⁷ His concern is to determine the domain of the academic discipline of physical education. According to him there is a body of knowledge proper to the area. The problem is that the knowledge related to physical education is scattered and not well organised. It is sometimes handled in part by related disciplines. However, the area has in human movement a clear focus of study. For Rarick, the immediate task of physical educators was to bring order into the field and build a general framework for the body of knowledge.

The other papers published in the *Quest*, though focusing on relevant topics, do not bring new contributions in relation to the academic discipline of physical education. They comprise a review of the arguments related to the criteria of a discipline, an outline of the structure of knowledge of physical education and an analysis of the relation between the profession and the academic discipline. The final articles report the results of academic meetings focusing on the organisation of the body of knowledge of physical education.³⁸

We hope to have shown with the presentation of these views and events that the

1960s were rich in debates and ideas concerning the academic identity of physical education in the United States. It is possible to state that by the end of the decade almost all important scholars and organisations in the area were aware of the issue. To summarise, we may say that by then the question had been properly formulated and a collective effort was underway with the aim of finding a proper solution to the problem.

In the 1970s and 1980s significant contributions were made. However, the conflicts regarding the scholarly and professional dimensions of the area intensified. Even though substantial material was published on the matter of the academic discipline, the problem still resistant to theorisation of scholars and no solution had been reached. An examination of materials of the time supports this claim.

In 1972, Siedentop was quite critical of those who emphasised the academic dimension of physical education.³⁹ For him, while the problems with the profession especially in public schools had reached critical stages, scholars in universities were ‘tilting with academic windmills’.⁴⁰ He argued that the new teachers were likely to know more than their predecessors in terms of the sociology of sport and exercise physiology to engage in graduate studies. However, they were not well prepared for working in schools. He stressed the need to give more attention to matters related to the professional dimension of physical education. Thus in Siedentop’s view, the concerns with the scholarly field had gone too far. However, another important aspect is that this scholar makes reference to reactions against ‘human movement’ as the focus of inquiry of physical education. For him, ‘sport’ started to receive substantial support from some sectors.

The trend towards changing the focus of the area to sport could be noticed as early as the late 1960s. The journal, *Quest*, dedicated an issue to the matter under the title *Toward a Theory of Sport*.⁴¹ There, Sheehan (1968) stresses the need for agreement about the focal point of physical education and argues that sport is the basic frame of reference for the area. The author proposes the name sport science instead of physical education.⁴²

The issue receives attention from other scholars. VanderZwaag (1973) argues that two

positions emerged from the debates on the academic identity of physical education.⁴³ The author identifies the first as exercise science. For him, the tradition of taking exercise as a focus of inquiry could be observed as far back as half a century ago. The second position, however, was still in the genesis stage. He designates this academic trend as sport studies. Two other studies (Whited, 1973 and Keenan, 1974) argue in favour of sport as an object of study and suggest ways to develop undergraduate programs in this area. There is an indication that some universities were adopting the term 'sport science' to name their departments and faculties.⁴⁴

In 1977, Ulrich describes the division of views about the focus of physical education in terms of movement theorists versus the sport theorists. In the author's view, attempts would probably be made to incorporate one position into the other. However, the wider and more encompassing concept of 'human movement' would be acknowledged as the central concern of the area.⁴⁵

A more cogent argument for the disciplinary approach of sport appeared in Zeigler (1979).⁴⁶ According to the author, the discipline known as 'sport studies' was at an early stage. However, the impact of sport on culture justified investigation in this area. The author presents a model for the study divided into (a) arts and social sciences and (b) natural sciences. Each of these large areas comprised disciplines that focus on particular aspects of sport.

The following passage illustrates his conviction that sport is a worthy subject of study. Zeigler states that,

'Sport should be *declared officially* an integral component of what has too long been considered the physical education base of departmental, division, school, institute, faculty, and college titles and/or programs. Thus, names and titles should be changed to include the term 'sport' at the first possible moment.'⁴⁷

Despite the efforts of many scholars to change the focus of inquiry to sport, the mainstream was still directed to the study of human movement. Many articles appeared during the 1970s and 1980s arguing in this direction.⁴⁸ However, those arguing for

the study of sport left some impression on physical educators and attracted many followers as the decades progressed.

In the 1980s the concerns with the academic identity of physical education reached a second critical moment with issues about specialisation, fragmentation and the reunification of the professional and academic dimensions of the area. Several statements in favour of the reunification of the field appear in the work of scholars. At this time, American physical education had achieved some degree of specialisation in many research areas. For instance, the North American Society for the Sociology of Sport was formed and had begun publishing a newsletter in 1978. Loy (1980) describes the early 1980s as a period in which the third generation of sport sociologists were undergoing graduate studies.⁴⁹ Other societies in the fields of history, psychology, philosophy and medicine of sport, to mention some, were also developing activities and had scientific journals on their specialities.⁵⁰ These organisations suggest that a significant number of scholars were dealing with particular aspects of the area. It was getting increasingly difficult to follow the development of physical education as a whole. The specialisation was taking the area into a state of fragmentation.⁵¹

In the years that follow, some scholars expressed concern with the identity of physical education. In 1981, VanderZwaag mentioned the uncertainty about the parameters of the area.⁵² After examining the history of the debate over the nature of the field, Rose (1986) argued that little progress has been made over the 100 years.⁵³ In 1986, Ellis stressed that scholars in the departments of physical education had extended their research interest to an extent so far removed from human movement that their links to other disciplines which the area relies on would eventually break some of the unique focus of the field.⁵⁴

More recently, the Holmes Group Report (1988) proposals for changes in the preparation of teacher in higher education were the subject of the attention of physical educators. Similar to the Fischer Bill in 1961, the Holmes Group Report assumed that the cause of poor school teaching was inadequate professional preparation. The Report recommended that before starting professional courses, students receive solid theoretical and scientific background in their respective disciplines. For Razor (1988),

this document provoked some concerns and was the cause for continued discussion within physical education as to the acceptance of the area as clearly defined subject matter. The author pointed out that despite the attempts to define the subject matter that constitutes physical education, no definition had been accepted by the profession. According to the author, if the proposals of the Holmes Group Report gains acceptance, physical education would have to show that it is legitimate solid subject matter with a body of knowledge.⁵⁵

In 1989, the American Academy of Physical Education devoted an entire volume of their annual papers to the subject of undergraduate programs and the name of the area. In this publication, many issues related to the academic identity of physical education emerged. Some scholars focused on the body of knowledge and the organisation of the discipline.⁵⁶ In 1990, the National Association for Physical Education in Higher Education also devoted an issue of the journal, *Quest*, to that matter. This issue consisted of an historical overview of the significant points debated during the 1960s, 1970s and 1980s regarding the identity of the area. It focus on issues such as disciplinary and professional orientations, nomenclature and body of knowledge.⁵⁷

An examination of the bibliographical material published during the early 1990s suggest that the controversy about the identity of the area was still ongoing. According to Thomas (1991) nothing had really been resolved in the last 25 years of debates. She stated that physical education is more fragmented than ever.⁵⁸ For the author, assuming that physical activity is the focus of inquiry of the area, three fundamental questions must be answered in order to overcome the situation mentioned above. First it is necessary to develop a theory of physical activity. The question addressed in this stage is 'What is physical activity?' It is necessary to achieve some agreement about the meaning of this term. The second question relates to the things the physical educators need to know about people as moving beings. The answer to this type of problem is the concern of the subdisciplines that compose physical education. It comprises the body of knowledge or subject matter. Finally, the area should address questions related to the professional dimension. The author mentions here issues related to teaching.

In 1993, Murray and Mann stated that the history of the debate over the nature of the field suggests that little consensus, if any, has been reached. For them this process has consumed too much time and energy of the people dealing with the area. They argue that the area should give more attention to the profession and attempt to improve the quality of the courses.⁵⁹

We understand that the episodes and studies mentioned in this section demonstrate that the problem of the academic identity of the area has been concerning North American physical educators since the end of the last century. They also show that no agreement has been reached despite the great amount of research and discussion about the matter. We believe that the information presented here provide sufficient historical background for the understanding of the topics examined in chapter 3.

2.3 The German Tradition

In this section, we focus on the search for the scholarly identity of physical education in Germany. There are two peculiarities of the development of the area in this country that seemed important to mention from the outset. In the German-speaking countries the term ‘physical education’ has been replaced by either ‘sport science’ or ‘sport sciences’.⁶⁰ The expression is employed to refer to the academic field in its research and teaching dimensions. It includes a wide range of aspects from the humanities and arts to sciences as they relate to sport. Second, the concept of sport has always been diffuse and the object of subjective interpretation. In Germany, the term ‘sport’ is understood in a very general sense. Its meaning is all-inclusive and comprises any kind of physical activity.⁶¹

In Germany, attempts to develop a model for the integration of the body of knowledge of physical education started to appear in the 1960s. Of the many who have looked at the problem, the following studies seemed to be the earliest relevant contributions. In the former German Democratic Republic, Stranai (1962) and Erbach (1964, 1966) were the first to give systematic treatment to the matter.⁶² According to some scholars, the expression ‘sport science’ emerged in that historical context.⁶³

In the Federal Republic of Germany there are indications that Schmitz started the debate in 1966. Renson (1989) argues in this direction. For him, this scholar was the first to address the problem in that country by asking whether one should speak of a science of physical education or science of sport.⁶⁴

Since the emergence of these scholar's ideas, the epistemological justification of sport science has been the focus of intense attention in that country. In many ways the international debate concerning this matter has been shaped by the ideas developed by German scholars. However, before examining the ideas of these scholars, it is important to have a brief look at the question 'Why German scholars have to face the problem of the theoretical justification of a science of sport?'

The reasons that prompted these people to engage in the matter are not easy to identify. The attempts of the East German scholars to develop a theoretical framework to integrate the disciplines concerned with the study of sport seem to be connected, at least in its early stage, to the policy of the government to use sport as a political and social element in the consolidation of the Communist State. Some authors have argued that the increasing interest in the scientific development of the area was driven by political motives. It is suggested that this factor may have brought about the need to optimise the use of human and material resources and helped to foster the concerns with the scientific identity of the area.

Marques (1992) examining the development of sport science, argues in this direction. For him, the bases of sport science were established in the second half of this century mainly because of the ideological struggle between East and West blocs. According to the author, the social and political importance of the Modern Olympic Games was a key factor for the scientific treatment of sport.⁶⁵

This argument finds support in other studies. We may infer from Riordan (1981) that serious scientific studies about sport began to appear in the East Germany at the first years of the 1950s. The foundation of the University of Physical Culture in Leipzig played an important role in fostering the scientific research in the field. As a result of such policy, the country achieved remarkable results in sport events since the late 1960s.⁶⁶

Haag (1994) pointed out that since 1945-50 the development of institutions of sport science has been quite steady in the West Germany. In connection with the 1972 Olympic Games in Munich the number these institutions increased quite fast.⁶⁷

Some other factors have also been pointed out as major influences on the development of sport science. Meinberg (1991) sees the situation more as a global process. According to him, the scientific development of the industrialised nations affected all dimensions of society. The world of sport was also affected by these changes.⁶⁸ Another important factor mentioned by the author is the transformation of sport into a mass phenomenon. The making available of sports in schools and clubs, and the construction of public facilities allowed significant numbers of people to engage in such activities.⁶⁹

These views receive support in the study of Nigg (1993). The author pointed out that the modern society initiated among other things a movement towards the goal of making sport available to everyone. He argues that this goal was more or less achieved in Western society by the first half of this century. For him, around the same period, scholars started to become involved with the investigation of sport.⁷⁰

However, the most relevant contribution to the question under investigation in this section seems to be the study of G. Schindler, G. Schnabel and F. Trogsch (1977).⁷¹ These scholars make a close examination of the ideas of Erbach and how he saw the emergence of sport science in the early 1960s. According to the them, after making a retrospective of the evolution of sport science up to 1964, Erbach arrives at the conclusion that the expression 'sport science' was imposing itself day after day. This was so because, as a historical phenomenon, sport was placed at the centre of the public interest, more or less at the same moment that science was penetrating all domains of social life. The following quotation of Erbach's study was extracted from the work of these scholars and used here to illustrate his views on the matter.

‘ If we abstract all particular and national forms of evolution, we arrive at the conclusion that what we call nowadays sport science emerged from the reunification of two historical traditions of which the extensions are currently medicine, for one side, and pedagogy for the other. Each of

them is a scientific domain strongly connected to social needs.’⁷²

In the case of the Federal Republic of Germany, some scholars have pointed out that in most universities the study of sport was not considered worthwhile until the late 1950s and 1960s. Willimczik (1974) argues that the difficulty in establishing sport programs in German institutions was due to a large extent to the fact that universities were seen as places of higher education only. In that country, the instruction of physical educators had been connected for a long time to practical matters. According to the author, this situation posed barriers for the acceptance of the area in the scholarly community.

The author presents empirical data that indicates an increase in the theoretical disciplines offered in the sport courses from 1968 to 1974. The study also shows that in the beginning sport science focused mainly on pedagogical aspects of sport. For Willimczik, this trend lasted until the early 1960s. At that time, various disciplines began to develop. Most of them had their origins on what he called ‘mother science’. For instance, psychology of sport came out of psychology and sociology of sport from sociology. This period may be referred to as multidisciplinary and according to him described the situation of sport science in the Germany of the middle 1970s.⁷³

As a consequence of the growing importance of sport, a number of institutions created academic careers and courses with the aim of investigating problems related to it in Germany. This led to the professionalisation of scientific research about sport in many institutions of higher education. It also provoked an increasing specialisation. Scholars from a variety of backgrounds were examining problems in this area. Each of these disciplines investigated sport from a particular interest and point of view. Thus, the term sport science became an umbrella for a multiplicity of studies connected to sport.

The study of Haag (1994) illustrates the current state of the so-called sport science in that country. According to him, 68 institutions of higher education relate to sport are in existence. They all have the status of scientific institution. This means that they have the autonomy to grant doctorate degrees in the field.⁷⁴

An examination of the ideas of these scholars highlighted some factors that may have affected the development of sport science and given impetus to the attempts to develop an integrative approach to the field. These factors were (a) political interests and ideological conflicts between socialist and capitalist blocs; (b) 'scientification' of the industrialised nations, and (c) the massification of sport activities in the Western societies. With this historical background in mind, let us move to the examination of some of the major ideas related to the justification of sport science as an autonomous area of scientific research.

The first idea we would like to direct attention to is Stranai's system of the science of physical culture, presented in a paper published in 1962. Even though many scholars give more credit to works published after this period, we consider the system developed by Stranai to be one of the first attempts to organise the body of knowledge of the area. As we try to show in this section, his ideas served as a reference for the work of other East German scholars. This seems to be a satisfactory justification for starting with his views on the matter.

Stranai developed a system of the science of physical culture composed of three parts (A, B and C).⁷⁵ Part A, comprised traditional disciplines connected with the study of sport such as biomechanics, physiology of physical education, hygiene of physical education, sports medicine, history of physical culture, etc. Part B was composed of a general theory of physical education. Part C, consisted of three sub-sections named: (i) methodology of physical education for children and youngsters; (ii) methodology of physical education for adults; and (iii) methodology of physical education for people with age 1, 2, 3, etc., and theory and methodology of gymnastics, games, athletics, swimming, cycling, tourism, ski, wrestling, boxing, etc.

In this system, there is a correlation between parts A and B, that is to say that developments in the traditional disciplines, e.g. biomechanics and history of physical culture, affect the theory of physical education and vice-versa. This type of correlation between A and B does not exist in relation to C. The latter is affected by changes in the other two but it does not affect them. Therefore, for Strain, the science of physical culture is a system composed of branches of the traditional disciplines and

a general theory of physical education. These two parts interact one with each other producing new scientific developments and give theoretical support for a third part composed of specific sport theories and methodologies.

The examination of the bibliographical material does not allow us to arrive at any conclusion as to whether Stranai's views had any practical effect on the organisation of sport science in East Germany. However, the analyses of the ideas of scholars that came after him show that his system of physical culture provided the basis for further developments. For instance, Erbach's system of sport science is almost a reproduction of Stranai's system of the science of physical culture. Considering that Erbach has been identified as the forerunner of the debates concerning the nature of sport science in that country, then the work of Stranai may be regarded as of significant importance.

It seems that the natural step to follow now is to look at the work of Erbach. As stated above, this scholar was the first to pose the problem in solid basis and from his views a conception of an autonomous science of sport could be developed.⁷⁶

Erbach's system of sport science presented in a paper published in 1964 comprises four parts (A, B, C and D). Part A, comprises the disciplines of history of physical culture, psychology of sport, biomechanics, etc. Part B consists of theory of physical culture. The author includes here sociology and sport administration. Part C is composed of theory of physical education. Part D relates to theories and methodologies of several physical exercises and sports.

If we compare the systems of Erbach and Stranai, we see that there are no significant differences between them. The main distinction is that Erbach adds a new part to the system, namely the theory of physical culture. This part makes the connection between the traditional disciplines and the theory of physical education. It seems that the author understands that the theory of physical culture is wider than the theory of physical education and gives theoretical support it.

The influence of this system is observed in two models that appeared in later periods. In 1965, Erbach and Trogisch developed a simplified model for sport science. It was composed of five parts. The first three consisted of disciplines such as history of

physical culture and biomechanics divided according to their main characteristics into large areas namely philosophy, natural sciences and social sciences. The other two parts are: theories of physical training directed to social applications, and theories and methodology of sports. In 1970, Schindler and Trogisch developed a similar model.⁷⁷

In the years that follow, some important events occurred and many studies were published on the matter. Renson (1989) mentions that a journal was launched on the eve of the Olympic Games in Munich. It was named *Sportwissenschaft* (Sport Science). The first issue appeared in 1971. According to that author, the editor explained that the name 'Sport Science' was used as opposed to 'Sport Sciences' as a plea for an integrative science.⁷⁸

Some German scholars, however, saw the matter in a different way. In 1974, Willimczik argued that by that time it was not correct to talk about sport science. The area had not achieved the level of integration to justify such a name. He stressed that in the future when the area has developed to a totality it will be possible to speak of a sport science.⁷⁹

A different position is presented by Ries and Kriesi (1974).⁸⁰ For the authors, 'sport sciences' is an applied science. This is so because the problems it deals with are not primarily given within the research process itself, but they emerge from issues related to everyday life. As an applied science, 'sport sciences' is strongly connected with knowledge of the natural and social sciences.

The authors stressed the importance of two aspects for the integration of sport sciences into a unified sport science. The first one is the definition of a common problem. The second is the development of integrative theories and paradigms. With respect to the common problem, the authors suggest that sport science investigates topics related to the conservation and improvement of the human capacity to move. Regarding the development of integrative theories, they argue that theories have to satisfy the following conditions: (a) be testable and subject to rational criticism, (b) give satisfying explanations of problems and afford a basis for predictions and applications, and (c) have a clear structure composed of a hierarchy of hypotheses.

They conceive the process of the construction of sport science in three phases. In the first phase scientists coming from different basic sciences start to study sport. The second phase is characterised by interdisciplinary contacts. In the third phase an integrated theory of sport is established. From an examination of the author's views it is possible to say that sport science was then in the second phase since their theoretical efforts go in the direction of building a theory of sport.

In the 1980s and 1990s, the problem of the integration of sport science attracted the attention of several German scholars. However, an examination of some publications of the period reveals that no integration was achieved. Three studies support this claim.

We may infer from Renson (1989), that scholars in Germany were sceptical about the integration of the area. According to him, some authors concluded that sport science remained a multidisciplinary aggregation and others stressed that integration is problematic because the problems are solved separately by each subdiscipline. For this reason a common concept to organise the area was still missing.⁸¹

This view is shared by Willimczik (1992). The author identifies problems related to the identity of sport science and its advancement in the direction of an autonomous scientific discipline. He questions whether the area is achieving any scholarly coherence.⁸² The difficulties posed by the justification of sport science are stressed by the author as follows:

‘There can apparently be no doubt that sport science represents an independent science which does not need to justify its existence or status. (...)The acceptance and recognition achieved by sport science could lead to the (mistaken) conclusion that it possesses a specific and elaborated theoretical orientation and a kind of identity corresponding to scientific theory. Yet this is not the case.’⁸³

Willimczik also pointed out that in the late 1980s and early 1990s there has been no interest in scientific theory. According to him, the few studies focusing on the subject of the theoretical justification of sport science regretted that a unified theory

was not achieved. The author singled out two reasons for the lack of epistemological justification of the area. The first one is related to the very recognition of sport science by most of the academic world. In the opinion of this scholar, the scientific study of sport is currently widely accepted and for this reason people see no need to justify its existence. The second is that the discussion concerning the matter has been rather abstract. He stresses the need to restart the efforts to develop a unified theory.

The final contribution we want to look at is Haag's book, *Theoretical Foundation of Sport Science as a Scientific Discipline*, published in 1994.⁸⁴ In this study the author attempted to develop a theoretical justification for sport science. According to him, science changes constantly due to internal and external factors. New questions emerge and are treated by the existing scientific disciplines. In the case that questions related to an area gain increasing social importance, then new sciences develop. Haag calls these sciences theme-oriented or subject-oriented because they focus on a theme of high social relevance. He mentions as examples of these type of scientific areas nutrition, information and environment among others. Movement, play and sport are also included in this category.⁸⁵ Therefore, for the author, the science of sport is a theme-oriented science. According to him, there are four basic questions that make up a theoretical justification of this science. These questions refer to the definition of its aims and functions, the body of knowledge, the research methodology and the relationship between theory and practice in sport science.

For Haag, the aims and functions of sport science are to investigate the many dimensions of sport, a phenomenon that has become rather important in contemporary society. This science intends to find answers to unsolved problems related to sport and advance methodologies and theories regarding practical and theoretical matters.

With respect to the body of knowledge, the author proposes a classification composed of four groups: (a) established theory fields, (b) new theory fields, (c) sport specific subject fields and (d) general subject fields. In the first group are included, for example, sport medicine, sport biomechanics, sport history and sport philosophy to mention some. The second is composed of sport law, sport economy and sport

information among others. In the third group we find movement science, play science and instructional science of sport. For the author, this category may be characterised by the integration of research results gained within the first two groups. The fourth group contains subject fields that are of relevance to sport but also have a relation to other phenomena and scientific disciplines. For instance, sport and health, music and movement, and sport and mass media belong to this category.

Another aspect highlighted by Haag for the justification of sport science refers to research methodology. For the author, the ways and conditions in which an area gains knowledge is decisive for its scientific recognition. He advances the argument that a model for research methodology in sport science has been developed. This model is referred to as 'Kiel Model of Research Methodology'.⁸⁶ It comprises six steps, each of them representing a phase of the research process. These steps are (a) examination of the theoretical positions and problem formulation, (b) assessment of the adequate research methods to be employed, (c) research designs, (d) techniques of data collection, (e) techniques of data analysis, and (f) knowledge transfer.

The relation between theory and practice is the last aspect in the theoretical justification of sport science proposed by Haag. An important issue to be considered here, according to the author, is that the general assumptions and hypotheses for sport science research have to be generated in connection to practice. This part also requires evaluation of research on the consequences of transferring theories to practice and the usefulness of the applied methods.

Haag's work seems to be the more systematised approach to the justification of sport science in recent years. However, the author recognises himself that sport science has not achieved a fully established and recognised stage.

With an examination of these studies we have attempted to give a panoramic view of the major reasons that prompted German scholars to engage in the justification of sport science. As we have seen, there were different approaches to the problem. Despite the efforts to find a proper resolution it seems that a unified theory of sport was not achieved. This suggests that sport science is still lacking justification. We hope that the historical overview afforded in this section will help the understanding

of the ideas presented in chapter 4 where some of the arguments presented here are examined in more detail.

2.4 The Francophone Positions

In this section we cover the debate in the French-speaking world. We included under this designation France, Belgium and part of Canada. There seems to be some links and distinctions between Belgium and the Netherlands regarding the development of the problem of the academic identity of physical education. For this reason, a brief examination of the debates which occurred in the latter is also provided here.

In France, the attempts to establish a science of human movement can be traced back to the middle of the nineteenth century. As mentioned earlier in this chapter, the French scholar Nicolas Dally proposed a science of movement in 1857. There is also evidence that Georges Demeny and Alexis Didacus, two important precursors of French physical education, attempted to define the area employing this notion. The latter produced a book entitled *The Science of Movement* in 1883.⁸⁷

However, the systematic efforts to give a theoretical treatment to the matter begin to appear in the 1960s. Le Boulch has been considered one of the first scholars to deal with the problem. In 1966 he published a study on the topic of education through movement. There the author stressed the need for the study of human movement as the focus of physical education. His views on the matter appeared in a more systematised way in a second work published in 1971. In that study, entitled *Vers une Science du Mouvement Humain* (For a Science of Human Movement), the author pointed out the problems faced by the area of physical education in France.⁸⁸

According to Le Boulch, anyone attempting to study the science of human movement in-depth is perplexed about the way to go because of the dispersion of knowledge in several departments of the traditional faculties. As a consequence, there is lack of unity in research. He criticised what he called the wasting of time studying subjects that are not directly related to the field. The author argued that the knowledge

acquired in disciplines such as anatomy, psychology and sociology among others was interesting in itself but most of the time difficult to apply to the area of human movement and not sufficient to understand and solve the problems faced by the physical education teacher.

As a preliminary step for the development of his ideas about the science of human movement, the author examines and criticises the dualistic assumption that gives support to physical education. He argues that the tradition of thinking the human being as divided into body and mind has led to mistaken conclusion that physical education focused solely on the body. For him, this conception sees the body as an instrument. According to Le Boulch, the science of human movement attempts to break with this view. This science focuses on movement as a manifestation of human conduct. Therefore, it has to incorporate the physiological and biomechanical aspects as well as cultural, psychological and social factors.

In the same year, another French scholar published studies related to the academic identity of physical education. Parlebás (1971) attempted an epistemological justification of physical education.⁸⁹ The author addressed the question of whether physical education is a science or solely a juxtaposition of knowledge coming from different sectors. Ever since, this author has been studying the problem in a systematic and peculiar way.

In 1987 Parlebás pointed out that physical education was undergoing a difficult period in France.⁹⁰ According to him, it was a critical moment in the evolution of the area in that country for four main reasons. The first was connected to the proliferation of techniques, methods and practices related to physical education and sport. This provoked the fragmentation of the area. The second was linked to the diversification of the areas of intervention. Sectors like school education, high performance sports, leisure centres, and special physical education had achieved some degree of specialisation. This led to institutional conflicts and generated new breaks in the area. In the professional training courses the solution proposed is to bring together knowledge from the traditional disciplines. For the author, few changes occurred in this matter in the last 40 years. He is quite sceptical about the idea that a simple addition of

theories and methodologies coming from different fields would produce a coherent body of knowledge. Finally, in the research area the same fragmentation occurs. In addition, most of the studies are in line with the mother disciplines and refer only indirectly to problems of physical education. The author stresses that changes can only be achieved if those involved with the area face the problem at all these levels.

The author moves then to a more positive approach in an attempt to build a justification for the area. The author argues that since the middle of the last century physical education has been trying to find its fundamental principle in the concept of movement. For him, initiators of French physical education attempted to define the scope of the area through this notion. More recently, Le Boulch followed the same path. He claims that this is an old fashioned idea since the concept of human movement tends to reduce the physical action to its biological dimension. For this reason, physical education cannot focus on the human movement.

According to Parlebás, once we have moved away from the notion of ‘human movement’, the crucial question to be asked is whether physical education possesses a specific domain of inquiry. For him, there is indeed an original subject that gives identity to the area. He stresses that the ‘motor conduct’ (*conducta motriz*) is the subject of physical education.⁹¹ The author states his position in the following manner:

‘The concept of motor conduct represents the common denominator of all physical and sport activities. This is a unified concept that makes intelligible the set of body practice, no matter whether it is disc throwing or rugby, gymnastics or rolling skating, parachuting or lawn tennis. Beyond the disparity of features of the physical practices resides undoubtedly a shared unity that becomes evident in this way.’⁹²

This concept, the author suggests, denotes persons in action and highlights their forms of motor expression. The advantage of this notion is that it brings together at the same time two perspectives of physical activity. On the one hand, it opens the possibility to understand the movement in space and time. On the other hand,

it allows the investigation of the subjective elements involved on it as, for example, perceptions and motivations.

However, for the author, physical education is not the science but the pedagogy of the motor conduct. This is so because physical education is a normative discipline. That is to say, it intends to interfere positively on some dimensions of the lives of the practitioners. Parlebás also argues that 'motor conduct' is too much centred on the individual to be the subject of a science. For the author, a scientific discipline must possess a neutral subject of inquiry. Putting the matter another way, something that transcends the individual experience. He proposes the motor action as the focus of this science and names it 'praxeology' (praxeología) or the science of motor action.

According to Parlebás, the aims of this science are to reveal the internal logic of each motor situation. The author argues that in his investigations it was possible to establish three criteria to distinguish all motor actions. These are (a) the relation between the practitioner and the environment, (b) the co-operative motor interaction, and (c) the oppositional motor interaction. On the basis of these criteria, the French scholar produces a classification of the motor actions in four categories. In the first one, the author includes the motor actions deprived of interaction. In this case, a given practitioner has no relation with others, for example, high jump and diving. In the second category are included those motor actions that involve antagonism between the practitioners, e.g., boxing, wrestling, lawn tennis and squash. The third group consists of interaction among partners. The author gives as examples here, group mountaineering, sailing and rowing involving teams. In the last category are included those motor actions that involve co-operation and opposition at the same time. The examples mentioned here are volleyball, basket ball, football and rugby. These categories combined with the criteria presented in (a) - the relation between the practitioner and the environment - produce other classifications. For example, in swimming the environment is in most of the occasions uniform. This is not the case of surf where the conditions change all the time.

As a conclusion to the analysis of Parlebás' ideas, it is important to mention that for the author neither multidisciplinary nor interdisciplinarity will provide identity to

the area we traditionally call physical education. The first is solely a juxtaposition of knowledge while the latter is the submission of the area to the traditional disciplines. For him, the notion of motor action is the starting point for the aspirations of the area to achieve scientific recognition.

More recently, other studies dealing with the identity of the area appeared in that country. There are references to the work, *Epistemologie des Activités Physiques et Sportives*, by the French scholar Claude Bayer published in 1990.⁹³

In Canada, concerns with the scholarly dimension of physical education appeared in the early 1960s. According to some scholars, Meynard introduced the term 'kinanthropologie' in 1966.⁹⁴ For Sérgio (1979) and Renson (1989), this term is a composition of three Greek words, namely: *kinos* (movement), *anthropos* (man) and *logos* (science).⁹⁵ The word was employed as a title for the journal *Kinanthropologie*, an international publication published in French.⁹⁶

Two scholars made a substantial contribution to the debates in the French-speaking part of Canada. An examination of some of their ideas brings some insights in to the matter. Sheedy (1974) stressed that physical educators have seen their area of work as: a science, an academic discipline, a pedagogic field, a domain centred on corporeal education and motor performance.⁹⁷

The Canadian scholar argued that the great majority of studies that focus on the justification of physical education have neglected a fundamental aspect. They do not attempt to determine whether a theory of physical education is possible and, if so, under what conditions. The author pointed out that it is possible to develop a type of theory that would be appropriate to physical education. This would lead to the scholarly autonomy of the field.

According to him, what differs disciplines or sciences one from another is their formal object of inquiry. That is to say that each science or discipline cuts into reality an area for scientific investigation. Two sciences cannot study the same part of reality. Therefore, it is necessary first to determine the object of the discipline and then choose a model for its study. For Sheedy, the object of physical education is physical

activity and sports. With respect to the model, it seems that the author equates this term with scientific method since he presents as an example the hypothetico-deductive method. He argues that physical education should develop its own mode of inquiry.

Bouchard (1974), another Canadian scholar, also developed views about the matter. He argued that the powerful tensions that existed within physical education regarding the nature of the field were not exclusively of the academics and professionals of this area.⁹⁸ For him, specialists in other fields were facing the same difficulties and the urgency of developing new sectors of inquiry and working in co-operation with other disciplines.

According to the author, the limits of the professions and academic areas that could be stated with certain precision in the past were becoming increasingly complex. Even though the knowledge that pertains, or is related to, physical education was not growing in the same rate as other areas, it was also part of this process of knowledge expansion. In the case of physical education, however, there were other factors that also contributed for the crises of identity. The author argued that the history of the area reveals more subjective points of view and opinions than scientific exactness.

The author surveyed the materials published up to that time and arrived at the conclusion that 'physical activity' is the focus of physical education. He suggested the name 'physical activity sciences' to refer to the field of study and research. This science comprises a specific object, a conceptual framework (body of knowledge) and relies on a set of methods. Even though the later originated from various sources, they are systematically re-assessed.

In the Low Countries, two theoretical positions have dominated the debate concerning the academic identity of physical education: 'kinanthropology' and 'gymnology'.

In Belgium, there are evidences to suggest that physical education achieved academic status as early as 1908 when the Higher Institute of Physical Education was created at the University of Ghent. According to some scholars, this was one of the first institutions to grant a doctorate in physical education.⁹⁹ This institute and others

that came later were under the jurisdiction of the faculties of medicine. Renson (1989) stresses that because of the emphasis on biomedical and health sciences these physical education institutes also developed professional training courses directed to physical therapy.¹⁰⁰

The increasing interest in physical activity and sport occurred during the 1960s gave grounds for the advancement of the idea that physical education should be an independent academic area. This turned in to reality when the University of Leuven authorised the transformation of the Institute of Physical Education into a department in 1976. Some years later, physical education was recognised an autonomous area and composed with medicine and pharmaceutical sciences the group of biomedical sciences.¹⁰¹

The concept 'kinantropology' has been the major idea driving the attempts to justify an academic discipline of physical education in that country. For instance, Renson (1989) has been giving systematic treatment to the matter since the middle of 1970s. This scholar presented recently an extensive approach to the problem. It seems important to examine some of his views about the matter in order to understand the current situation in Belgium.

Renson (1989) pointed out four conceptual trends in the debate regarding the academic identity of physical education. The author classifies these trends as follow: (a) disciplinary, (b) multidisciplinary, (c) interdisciplinary and (d) cross-disciplinary, and argues in favour of the latter.

Currently, Renson (1989) has been the main representative of the attempts to justify physical education using this approach. It is worth mention that for the author the term 'physical education' is not adequate instead he employs 'kinanthropology'.

It is important for the present analysis to quote Renson's definition of cross-discipline. According to the author:

'A cross-disciplinary science is oriented horizontally because it transcends traditional disciplinary boundaries. Although certain portions are borrowed from the traditional disciplines, a unifying concept exists

which generates its thematically integrated subject matter. Such a cross-disciplinary approach is informed by, though not subordinated to, the propositions and theories of the traditional disciplines.¹⁰²

Let us examine the above definition. The idea that a cross-discipline is oriented horizontally was also part of Henry's definition and refers to the fact that it cut across several traditional disciplines. In doing that, the portions of these disciplines relevant to the area are taken into consideration. The unifying concept is the study of the 'humans in movement in the context of sport, play, dance, physical exercise, work, or rehabilitation'.¹⁰³

With this definition Renson proposes five areas of specialisation: (a) developmental kinanthropology, (b) differential kinanthropology, (c) social-cultural kinanthropology, (d) clinical kinanthropology, and (e) agogical kinanthropology. The social-cultural kinanthropology, for example, studies to what extent social and cultural determinants affect physical, motor and behavioural aspects in their mutual interaction.

It seems that Renson's proposal is innovative in two ways. First, he attempts to integrate the portions of knowledge borrowed from the traditional disciplines around problems instead of subject matter. Second, he tries to bring together the biological and social-cultural factors related to the investigation of these problems. Therefore, to understand some problem in the specialisation mentioned above it is necessary to rely on theories and concepts from sociology, anthropology and history as well as biology and psychology. However, none of the disciplines is able to give an account of those problems. It seems that new concepts are also necessary.

The author argues that the viability and benefits of a cross-disciplinary approach were demonstrated in a research project where a group of workers investigated physical fitness from many perspectives. The research project included anthropometric dimensions, physiological and motor ability tests, sport and physical activity inventories, socio-cultural information and personality assessment to mention some. According to the author, this data was not broken down into isolated disciplines. On the opposite, they received a cross-disciplinary bio-cultural approach. For example, the impact of social determinants was not restricted to the sociological area of sport

participation, but also comprised the social differentiation of physical growth and motor characteristics.

Renson states that a unifying paradigm and a common denominator are necessary conditions for determination of the cross-disciplinary body of knowledge of humans in movement. According to him, kinanthropology provides such integration to the area.

In the Netherlands, the search of physical education for academic identity has followed a rather different path. Until 1969, there were no professional training courses offered in the Dutch universities. Most of the teachers receive their preparation in colleges. According to some scholars, the first appointments for university positions occurred in the late 1960s.¹⁰⁴ However, the first faculty was created in 1971. For Renson (1989) the integration of physical education in the academic environment was not an easy task. The area was seen as non-academic. The author mentions that it was even argued that the physical exercises connected to the course were conflictive with the academic world.

The historical development of physical education in that country provoked the fragmentation of the area into professional and academic courses. The first is located at the Academies of Physical Education and the second at the universities.

Among the scholars that obtained an academic post in the 1960s was Klass Rijdsdorp. This scholar developed a different view on the academic identity of physical education. In 1971, he introduced the term 'gymnology' as an alternative expression to physical education and sport science and put forward arguments to substantiate what he called 'science of the motor actions in an agogical framework'.¹⁰⁵ For the author, gymnology is a humanistic science. He argues that the term gymnology is an universal and linguistically manoeuvrable term. The expression is all-comprehensive and needs no translation. It is a combination of the Greek terms 'gymnazein' and 'agogical' that means 'to exercise' and 'educate, to provide direction'.¹⁰⁶

According to Rijdsdorp, gymnology is composed of three parts: (a) general, (b) special and (c) practical. Each of these parts consists of sub-divisions. For instance, general

gymnology is composed of fundamental, historical, comparative, didactics, and study of movement. These areas constitute the structure of this science around which the body of knowledge can be organised.

2.5 The Spanish and Portuguese Views

In this section we focus on the views and influences regarding the problem of the academic identity of physical education in countries of Spanish and Portuguese language, particularly to Spain, Portugal and Brazil.

In Spain, concerns with the academic identity of physical education can be traced back to the late 1960s. Cagigal (1968) addressed the question of whether physical education is a science. The author argued that there are two ways to answer this question. The first one is through the examination of the concepts involved. The second is through the analysis of the corpus of studies and practices culturally and historically defined as physical education. The author takes the second approach. According to the Spanish scholar, the scientific knowledge about physical education did not come out of any particular science. It was produced in a disorganised way and derived from a diversity of social practices and educational innovations. For him, physical education was not the education of movement but rather education through movement. He stated that movement is the disciplinary object of physical education.

The members of the *Grupo de Estudio Praxiológico* (The Group of Praxiological Studies), composed of Spanish scholars, developed a rather different perspective. In certain respects, their views are similar to those of Parlebás (see section 2.4 of this chapter). This is suggested for several reasons. First the group denomination makes clear reference to the terminology employed by the French scholar. Second, the theoretical framework is similar. There are also many references to Parlebás in the publications of the group. However, the group criticise what they consider the theoretical limitations of that author's model and attempted to develop an alternative approach.¹⁰⁷ The members of the group state that an important feature of their approach is that they do not take as starting point the humans in movement as Parlebás referred. For

them, the focus is on 'humans making decisions about movements'. What the authors want to stress is the intentionality involved in the human movement. According to them, this is the subject of inquiry of physical education or praxiology in their own terminology.

In the countries of Portuguese language, the debates concerning the identity of physical education have taken various forms. In the last two decades, an increasing exchange of ideas took place among these countries, especially between Portugal and Brazil. There are consequently similarities in the way the problem is considered in these nations. However there are also differences between them. This part of the study is organised to show their common features and peculiarities.

It is worth mentioning that the limited access to information on the current state of the questions in other Portuguese-speaking countries did not allow more concrete conclusions to be drawn about them. For this reason, these countries did not receive special treatment in the context of this study. However the close links that exist between Portugal and its former colonies suggest that the debates in the latter have been influenced by discussion which took place in that country. For instance, in Mozambique, physical education was until quite recently the only designation for the field. In the last decade, the term sport science has also been used to refer to the area. This came about mainly because of the influence of Portuguese scholars and leading physical educators from those countries that took their degrees in Portugal. The same situation seems to be occurring in Cabo Verde and San Tome and Principe.

In Portugal, the manifestations in favour of the academic autonomy of physical education began to appear in the 1950s. There are references to the work of Celestino Marques Pereira where the scholar declared that physical education is a new science. The following passage illustrates his views about the matter.

'Physical education is a new science, but indisputable, it is characterised by the nature and specificity of its content, by the determination of its aims and procedures of investigation and by the contribution it gives to other sciences and acquires from them.'¹⁰⁸

Despite the earlier efforts of this scholar, the problem only became an important topic on the agenda of Portuguese physical educators during the 1970s. At that time, Sérgio started to develop his ideas about the science of human motricity. Before we examine the views of this scholar it seems important to historically contextualise the emergence of the concerns with the academic identity of the area in that country.

Crespo (1992) provide an account of the situation in Portugal.¹⁰⁹ For the author, Portuguese physical education has experienced changes in its process of development. However, these alterations did not reach the core concepts and practices that give identity to the area. He described these changes as episodes of a linear process. The author points out that various reasons contribute for such a situation. The emphasis on practical matters in contrast to lack of theoretical debates was among the causes. Crespo argues that external factors also played important role.

According to this scholar, the strong connections of physical education to official ideologies in a period of limited liberty in Portugal favoured to keep stability in the area. It is important to mention here that the foundation of the National Institute of Physical Education occurred in 1940. This was the first institution of higher education to offer physical education training courses. Before the creation of this institution, the teacher preparation occurred in the so-called high schools of physical education. In the period of the creation of the National Institute, the country was under the dictatorship of António Salazar. Physical education was also included in he's policies for several decades. This certainly affected the evolution of the area in that country.

More recently, the changes in the political context, the scientific progresses in the field and the inclusion of physical education courses in the university provoked a fracture in the identity of the area. For the author, even though physical education finds itself currently in an adequate environment for transformations, the professionals of the area have not been able to make significant changes in their practice. In addition, the academic community has moved into a direction far removed from the practical problems. Therefore, no satisfactory alternatives have been found to give new identity to the area.

It seems that in this context the attempts to justify the science of human motricity

and the science of sport emerged. Since then, these expressions have been replacing ‘physical education’ when referring to the academic field. Currently, these concepts reflect the views of influential scholars of the two traditional faculties of physical education in that country.

In the early years of this decade, the *Higher Institute of Physical Education* (Instituto Superior de Educação Física) located in Lisbon, changed its name to *Faculty of Human Motricity* (Faculdade de Motricidade Humana). The modification came under the influence of Manuel Sérgio, one of the major supporters of the science of the human motricity in that country. In Porto, the Faculty of Sport Science and Physical Education has been more inclined to sport science. This is a consequence of its close links to the German universities. Scholars such as Marques, Bento and Sobral are among the best representatives of that position. With this historical background in mind, let us move to the examination of the ways the concepts of science of human motricity and sport science have been discussed in Portugal.

In 1974, Sérgio published a book entitled *For a New Dimension of Sport* (Para uma Nova Dimensão do Desporto).¹¹⁰ In this work, one of his earliest on the topic of the academic identity of physical education, the author regretted the situation of physical educators and described the area as a domain of non-theoretical technicians, unable to produce knowledge to base and guide their path. The author mentions the influence of the French scholar Jean Le Boulch on his views (see section 2.4 of this chapter). He stresses, however, the need to go beyond the ideas of this scholar and to systematise topics that seemed to be inarticulate in his work.

The author makes use of the expression ‘kinanthropology’ to denote what he later named the science of human movement. This term became part of his academic vocabulary as a result of the contacts with institutions of higher education of the French-speaking world. The author himself makes reference to the fact that the term ‘kinanthropology’ was proposed by the Institute of Physical Education of Liege. Sérgio argues that the term is adequate to refer to the scientific dimension of the area because it indicates objectively its subject of study.¹¹¹

According to Sérgio, a trend towards ‘movement’ and ‘motricity’ as the focal point

of physical education can be noticed since the 1960s. For the author, this is evidence of a paradigm change. He understands physical education as the pre-scientific stage of the science of human motricity. This science has its focus on the 'motor conduct'.

Some scholars have been sceptical about the science of human movement. Sobral (1987) has also argued in favour of sport sciences.¹¹² This scholar, however, makes a distinction among 'physical education', 'science of human motricity' and 'sport sciences'. According to the author, physical education is a set of practices while the science of human motricity is a body of knowledge. The latter gives theoretical support to the former. For Sobral, sport is an element of the set of practices we commonly call physical education. Therefore, the scientific study of sport (sport sciences) is a sub-domain of the science of human motricity.

The author argues that sport is the element of physical education that has experienced the more dramatic growth of importance in the last decades. It is gradually building its autonomy in terms of scientific research. He surveyed the scientific production in the area in Portugal and arrived at the conclusion that the volume of publications focusing on sport surpasses any other in the last 25 years. For this scholar, despite the material evidence of the increasing scientific interest in sport, there is still exist resistance from inside and outside physical education community to accept sport as a legitimate area of research and professional preparation at university level.

According to the author, the question to be answered is whether the area is still limited to focus on sport from the theoretical perspective of the traditional disciplines, or it is able to isolate its own problems and delineate its own research strategies. For Sobral, sport is a legitimate subject of investigation that reveals new problems. The author points out that the construction of this area of inquiry goes beyond the simple accumulation of knowledge originated in other scientific fields. He presents some examples to substantiate the claim that the theoretical models of traditional disciplines are not enough to solve problems that emerged from the practice of sport. The author mentions here, some theories and methodologies that support physical training in high performance sport, e.g., undulating method of load increase and plyometric training method. For him, the development of these methods cannot be

achieved employing concepts and theories that belong to the domain of the already established disciplines. Even though these areas provide important insights into the matter, the formulation of the problem, the procedures and the concepts involved belong to sport sciences.

In Brazil, concerns with the academic identity of physical education appeared in the early 1980s. They emerged as a consequence of a more general problem. Some scholars have referred to this situation as the crisis of identity of Brazilian physical education. The area has undergone considerable transformation since then. The changes encompass the redefinition of the principles and methods that have guided the production of knowledge and professional practice. In addition, scholars and professional institutions have tried to organise the area as an independent academic subject.

According to some authors, the concerns with the academic identity of the area emerged from the crisis of a model that has driven the development of physical education in that country since the end of 18th century.¹¹³ The basic assumption of this model is that physical education is a set of norms, prescriptions and practices related to the development of the human body. Because of its connection to medical and biological sciences it has been named Biological Model of physical education. A brief examination of the evolution of this model provides the historical background for an understanding of the ways in which physical education has attempted to demarcate its academic domain in Brazil.

An examination of historical data supports the view that the Biological Model passed through four periods of development: emergence, implementation, consolidation and crisis. Its roots can be traced back to publications of the end of the eighteenth century linking physical education to health and hygiene. At that time, physical education was a way to build up moral values and 'good habits' among the families of the agrarian elite with the aim of assisting and preventing a range of diseases. In the 1860s and 1870s, the first studies about physical education took effect. They consisted of theses submitted to the Faculty of Medicine in Rio de Janeiro.

The implementation of that model occurred in the last decades of the nineteenth

century. The studies conducted by Soares (1991) give clarification to this matter.¹¹⁴ The author pointed out that the concern with health and hygiene was presented in the discourse of the leading groups during the Colonial and Imperial Period (1822-1889). However, it was only with the Republic in 1889 that these groups could develop their ideology into action. The republican ideals based on liberal and positivist philosophies helped to build a naturalistic conception of the society and offered fertile ground for the advancement of the notions of a healthy body and physical exercise. The medical profession, then the main supporters of the Biological Model, were among those groups who helped to shape this new economic, political and social order. The author refers to this ideology as: Hygienist Doctor's Discourse. For Soares, the medical doctors were responsible for the broad acceptance of physical education in Brazilian society and its inclusion in the school curriculum. Physical education was an important instrument to make feasible their family policy. The aim was to create strong, harmonious and healthy bodies in opposition to the weak and sick ones of the colonial times.

The consolidation of the Biological Model took place from 1930 onwards. On the basis that physical education could build strong and disciplined bodies, the area was incorporated in broader political and economic projects. In the period of the Vargas government (1930-1945), it became part of the national program of education with the aim of transmitting the ideas of eugenics, nationalism and national integration. It was included in the Brazilian Constitution and several national policies. The most radical part of the period is named *Estado Novo* (New State) and was marked by non-liberal positions and the approximation of the Brazilian government to the ideology of National Socialism and Fascism. At that time, laws and regiments about physical education in primary and secondary schools were created as well as institutions to develop and control the activities related to it. Among the most important were the Division of Physical Education (1937), the National College of Physical Education and Sports (1939), the National Council of Sports (1941) and the Brazilian University Sports Association (1941).¹¹⁵

Another important step in the consolidation of the Biological Model occurred during the 1970s. In this period, the main elements that supported the recent development

of physical education were introduced. In 1971, the results of a survey sponsored by the government entitled *Diagnosis of Physical Education and Sports in Brazil* was published. The publication presented quantitative information about physical education in most of the Brazilian states. The results showed an unsatisfactory situation. For the primary schools, reasonable conditions were found only in 6 states from the 22 surveyed. The conditions in the other 16 states were considered poor or non-existent. In the secondary schools the picture was not different: insufficient facilities, low salaries and high number of student per teacher. Other information about professional training, sport clubs, parks, athletes, national associations, etc., completed the survey. The conclusions presented in this document were used to subsidise the National Policies of Physical Education and Sports. This policy connected physical education to the economic and social development. The basic ideas were to implement the area with the aim to prevent diseases, health rehabilitation and adequate use of the free time and leisure. An important aspect was to keep the population fit since this could help the economic development.

In the late 1970s and early 1980s, the Biological Model was the subject of severe criticism. Attempts were made to provide physical education with a sociological and cultural basis. At that moment, Brazil was returning to democracy after two decades of dictatorship. The social and political situation running in the country also helped to create discontentment with the Biological Model. With more freedom to criticise and organise their institutions, physical educators started to examine and redefine their functions and roles in society. This marked the crisis of the Biological Model and provoked a turning point in Brazilian physical education.

In that context the book, *O Que é Educação Física?*, emerged (What is Physical Education?) published in 1983. In this study Oliveira (1983) pointed out aspects related to the identity of physical education in Brazil.¹¹⁶ He asked questions about its nature and objectives. The study was a critical introduction to physical education, in particular to the way it was conceived in that country.

In the same year, a second book of considerable relevance was published. In that study, Medina (1983) presented a very critical view about Brazilian physical edu-

cation. He claimed that the area was undergoing a crisis of identity. The author examined the professional practice and produced a classification of the pedagogical trends of physical education in that country. According to him, physical education was too much oriented towards the biological and medical sciences. This led the author to direct strong criticism at the biological model of physical education and set the foundations for a sociological model.¹¹⁷

The books of Oliveira and Medina are considered landmarks in the discussions about the identity of physical education in Brazil. They were the first to draw attention to that question. However, the debates received momentum with the diffusion of Sérgio's ideas about the science of human motricity. This occurred through the participation of this scholar in various scientific events in the middle of 1980s. As we mentioned earlier in this section, Sérgio has been the main representative of the attempts to justify a science of human motricity in Portugal. His ideas were welcome by a great number of Brazilian scholars.

In 1985, the work of Sérgio began to be published in Brazil and his views raised the interest of the academic community. The first book of the Portuguese scholar published in that country was *Ciência da Motricidade: Uma Investigação Epistemológica*. (Science of Human Motricity: An Epistemological Investigation). In the years that follow, an extensive amount of articles appeared in Brazilian journals, especially in the Brazilian Journal of Sport Sciences (Revista Brasileira de Ciências do Esporte). These were followed by a second book entitled *Educação Física ou Ciência da Motricidade Humana*. (Physical Education or Science of Human Motricity) published in 1989.¹¹⁸

In 1987, Sérgio moved to Brazil to work as a visitor-professor at the State University of Campinas (Unicamp). There, the Portuguese scholar found an appropriate environment for his views and exerted influence on various physical educators. He lectured and supervised postgraduate students until the end of 1988. Even though this scholar stayed in the country for only two years he left a strong impression on his students and colleagues. His ideas also foster the development of lines of investigation in human motricity and the creation of a laboratory in this area.

Tojal (1995), for example, underwent his postgraduate studies under Sérgio's supervision. His doctorate thesis appeared with the title 'Human Motricity: An Emergent Paradigm'.¹¹⁹ In this study the author stressed that the Faculty of Physical Education of the Unicamp, where Tojal was the director, found in the concept of human motricity the theoretical justification for physical education. Putting the matter another way, the science of human motricity was a solution for the crises of identity of the area. Other academics of that institution also adopted the ideas of the Portuguese scholar. This is may be illustrated by the number of postgraduate students that rely on his work. For instance, from the five theses of doctorate produced at that faculty between 1990 and 1991, two were based on the theoretical framework proposed by Sérgio.¹²⁰

More recently, other Brazilian physical educators have carried out postgraduate research under Sérgio's supervision at the Faculty of Human Motricity in Lisbon. Among them, Oro (1994) and Cavalcanti (1995) examined the epistemological assumptions that give support to the science of human motricity.¹²¹

Even though the science of human motricity has many followers in Brazil, there is also a representative number of scholars that criticise the idea of such science. This position is clearly stressed in Ferreira and Bracht (1995). These scholars are sceptical about the possibility to establish a science of human motricity. For them, this concept does not solve the difficulties posed by fragmentation of the knowledge into several disciplines.

Various studies have been published focusing the problem of the academic identity of physical education from different perspectives. There are currently many trends regarding the subject of the area and the way to approach it. Besides the traditional perspectives based on the biological model, other approaches linked to human and social sciences are also present. These trends may be exemplified in the following way.

There is a trend based on the work of Jean Piaget. The studies of Freire (1989, 1991) are representatives of this approach in the field of physical education.¹²² This perspective argues that there is a close relationship between the perceptible and

intelligible dimensions of the human being. Human movement is the place where it is possible to find the product of this relationship. For the followers of this approach, the aim of physical education is to investigate human movement.

The second perspective is a consequence of the approximation of physical education to the current trends of Brazilian philosophy and sociology of education. The main representatives of this trend are Carmo (1985) and Ghiraldelli (1990).¹²³ These authors attempted to develop a Marxist theory of physical education. They used historical materialism to analyse physical activities. This approach elected human movement as the focus of the area.

Another theoretical perspective is connected to the field of motor development. According to Petersen (1991), one of the representatives of this approach, what gives identity to physical education is the study of motor actions.¹²⁴

More recently, Gaya (1994) presented a different perspective.¹²⁵ According to the author, sport is the subject of inquiry of the area we usually refer to as physical education. The academics of this field should concentrate on problems emerging from and related to the practice of sport.

As we can see, there are currently in Brazil several theoretical perspectives. Even though many of them focus on human movement, in most of the cases their theoretical assumptions are different, not to say incompatible. This has caused problems of identity at the academic level. The study of Go Tani (1988) about the organisation of university programs in physical education illustrates this point. According to him, it is impossible to approach the problem of research, postgraduate courses, professional training if the area is not clearly identified.¹²⁶

2.6 Conclusion

In this chapter we attempted to provide a historical introduction to the search for the academic identity of physical education in various countries. We have tried to show some of the reasons that prompted scholars to face the problem and the main

solutions proposed to it. Even though there is a variety of views regarding the matter, it is possible to say that a significant number of scholars focus on 'human movement' and 'sport' as subjects of inquiry. This suggests that these notions have achieved certain degree of recognition among physical educators. We also saw that many academics have argued that physical education is an autonomous branch of knowledge and attempted to make use of the concepts of academic discipline, science and a field of studies to describe such a situation. In the chapters that follow, attention will be directed to some of the arguments presented by these scholars.

Notes

¹The first professional training courses registered in the literature appeared in the early decades of the last century. In Denmark, the Military Gymnastic Institute was founded in 1804 and the Civil Gymnastic Institute in 1808. Those were followed by the foundation of the Royal Central Institute of Gymnastics in Stockholm in 1814. These courses are antecedents of the physical education colleges that began to appear in Europe and North America by the end of last century. A detailed account of these institutions and their importance for the emergence and development of physical education in other countries can be found in E.W. Gerber (1971) *Innovators and Institutions in Physical Education*. Philadelphia: Lea & Febiger.

²R. Renson (1998) 'Kinesiology: paradigm found or new speak for sport science?' in *Proceedings of the Third Annual Congress of the European College of Sport Science*. Manchester. p. 425.

³In this study, Park argues that the remote outlines of the discipline of physical education are located in the classical antiquity. The studies of Hippocrates, Plato, Aristotle and Galen concerning various aspects of physical exercise and athletics were presented to support the argument. The author also examines works in anatomy, physiology and philosophy among other areas that since the middle ages contributed to the emergence of modern physical education. She locates the disciplinary concerns in the late 19th century. See R. Park (1981) 'The emergence of the academic discipline of physical education in the United States.' in G.A. Brooks (ed.) *Perspectives on the academic discipline of physical education*. Champaign: Human Kinetics.

⁴*Ibid.*, pp. 27-28.

⁵For more on the effort of physical education to establish a scientific tradition see W. Kroll (1982) *Graduate Study and the Research in Physical Education*. Champaign: Human Kinetics; R. Park (1989) 'The second 100 years: or, can physical education become the renaissance field of the 21st century', *Quest*, 41(1):1-27; R. Park (1990) '1989 C.H. McCloy Research Lecture: health, exercise, and the biomedical impulse, 1870-1914', *Research Quarterly for Exercise and Sport*, 61(2):126-140; and R. Park (1981), *op. cit.*, p. 26-40.

⁶R. Park (1980) 'The Research Quarterly and its antecedents', *Research Quarterly for Exercise and Sport*, 51(1):1-22.

⁷Among the most important organisations created at that period were the International Council of Sport Science and Physical Education (1956) and the International Committee for the Sociology of Sport (1964). The journals of these institutions were respectively the *International Research in Sport and Physical Education* (1964) and the *International Review of Sport Sociology* (1966).

⁸An extensive account of the development of the sub-disciplines within physical education is pro-

vided in J.D. Massengale and R.A. Swanson (1997) *The History of Exercise and Sport Science*. Champaign: Human Kinetics; H. Haag, O. Grupe and A. Kirsch (1992) *Sport Science in Germany: An Interdisciplinary Anthology*. Berlin and Heidelberg: Springer-Verlag; and G.A. Brooks (1981) *Perspectives on the academic discipline of physical education*. Champaign: Human Kinetics.

⁹G. Erbach (1964) 'Gedanken zur Einordnung der Theorie der Körperkultur als Lehr und Forschungsdisziplin in das System der Sportwissenschaft' (Ideas on the Classification of the Theory of Body Culture as a Teaching and Research Discipline into the System of Sport Science). *Theorie und Praxis der Körperkultur*, 74-82; G. Erbach (1966) 'The science of sport and sports sociology: questions related to development - problems of structure', *International Review for Sociology of Sport*, 1(1):59-73; F.M. Henry (1964) 'Physical education: an academic discipline', *Journal of Health, Physical Education and Recreation* 35(7):32-33 & 69. It is important to notice that because of language barriers we had no direct access to Erbach's ideas published in 1964. We worked on a non-official translation of that paper to English and materials published by commentators of his work.

¹⁰See R. Renson (1989) 'From physical education to kinanthropology: a quest for academic and professional identity', *Quest*, 41(3):235-256.

¹¹ This paper was published for the first time in the Proceedings of the 67th annual conference of NCPEAM (1964), pp. 6-9. It was reprinted in the Journal of Health, Physical Education and Recreation (1964), 32-33 & 69 and in G. Brooks (1981) *Perspectives on the Academic Discipline of Physical Education*, Champaign: Human Kinetics. pp. 10-15. In this study we took the version published in 1981.

¹²This claim finds support in R. Park (1994) 'A long and productive career: Franklin M. Henry - scientist, mentor, pioneer', *Research Quarterly for Exercise and Sport*, 65(4):295-307; W. Kroll (1982), *op. cit.*, p. 42; Brooks (1981), *op. cit.*, p. 3; and S. Ross (1978) 'Physical education: a pre-discipline in search of a paradigm', *International Journal of Physical Education*, 15(2):9-15. These scholars argued that the position in favour of an academic discipline of physical education started with Franklin Henry.

¹³In the literature, there is reference to Henry's paper in the work of almost every scholar dealing with the subject. His ideas appeared in publications in United States, Canada, Germany, Britain, Portugal, Belgium and Brazil.

¹⁴R. Park (1981), *op. cit.*, p. 27.

¹⁵W. Kroll (1982), *op. cit.*, p. 29 and R. Park (1981), *op. cit.*, pp. 27-28.

¹⁶R. Park (1980), *op. cit.*, p. 2.

¹⁷W. Kroll (1982), *op. cit.*, p. 40.

- ¹⁸R. Park (1981), *op. cit.*, p. 32.
- ¹⁹Several studies mentioned that the pressures on American universities were closely connected to the advancement of the Soviet space program that culminated in the launching of the Sputnik in October 1957. In this respect see R.L. Blackenbury (1963) 'Physical education, an intellectual emphasis', *Quest*, 1:3-6; and C. Brown and R. Cassidy (1963) *Theory in Physical Education: A Guide to Program Change*. London: Henry Kimpton. pp. 20 and 29.
- ²⁰J.D. Massengele and R.A. Swanson (1997), *op. cit.*, pp. 1-2.
- ²¹M.G. Wade and J.A. Baker (1990) 'The changing framework of physical education: new name, new responsibilities', *Physical Education Review*, 13(2) p. 139 and W. Kroll (1982), *op. cit.*
- ²²The American Academy of Physical Education is the Physical Education Division of the American Alliance for Health Physical Education and Recreation. For more on the participation of the Academy in this issue see E. Metheny (1967) 'Physical education as an area of study and research', *Quest*, 9:73-78.
- ²³The Western Conference of Physical Education Directors was held for the first time in 1930. It is organised annually with the aim of discussing common problems and the advancement of physical education. It comprises the universities of Illinois, Indiana, Iowa, Michigan, Michigan State, Minnesota, North-western, Ohio State, Purdue and Wisconsin. See E.F. Zeigler and K.J. McCristal (1967) 'A history of the Big Ten Body-of-Knowledge Project in physical education', *Quest*, 10:79-84.
- ²⁴R.L. Blackenbury (1963), *op. cit.*, p. 5.
- ²⁵C. Brown and R. Cassidy (1963), *op. cit.*
- ²⁶*Ibid.*, p. 7.
- ²⁷The issue we are talking about is The Art and Science of Human Movement, *Quest*, Monograph II, April 1964.
- ²⁸R. Abernathy and M. Waltz (1964) 'Toward a discipline: first steps first', *Quest*, 2:1-7.
- ²⁹Henry (1981), *op. cit.*, p. 11.
- ³⁰*Ibid.*, p. 11.
- ³¹*Ibid.*, p. 11.
- ³²F.M. Henry (1978) 'The academic discipline of physical education', *Quest*, 29:13-29.
- ³³W.P. Fraleigh (1966) 'The perplexed professor', *Quest*, 7:1-13.

- ³⁴See *Quest*, The Nature of a Discipline, Monograph IX, December 1967.
- ³⁵J.J. Schwab (1967) 'Problems, topics, and issues', *Quest*, 9:2-27 and P.H. Phenix (1967) 'The architectonics of knowledge', *Quest*, 9:28-41.
- ³⁶P.H. Phenix (1967), *op. cit.*, pp. 28-41.
- ³⁷G.L. Rarick (1967) 'The domain of physical education as a discipline', *Quest*, 9:49-52.
- ³⁸These papers are the following: J.E. Nixon (1967) 'The criteria of a discipline', *Quest*, 9:42-48; C. Brown (1967) 'The structure of knowledge of physical education', *Quest*, 9:53-67; A. Steinhaus (1967) 'The disciplines underlying a profession', *Quest*, 9: 68-72; E. Metheny (1967), *op. cit.*, pp. 73-78 and E.F. Zeigler and K.J. McCristal (1967), *op. cit.*, pp. 79-84.
- ³⁹D. Siedentop (1972) 'On tilting at windmills while Rome burns', *Quest*, 18: 94-97.
- ⁴⁰*Ibid.*, p. 96.
- ⁴¹See *Quest*, Toward a Theory of Sport, Monograph X, 1968.
- ⁴²T.J. Sheehan (1968) 'Sport: the focal point of physical education', *Quest*, 10:59-67.
- ⁴³H.J. VanderZwaag (1973) 'Sport studies and exercise science: philosophical accommodations', *Quest*, 20:73-78.
- ⁴⁴See C.V. Whited (1973) 'Sport science educator', *Physical Educator*, 30(2):85-86; F. Keenan (1974) 'What is sport science' *Physical Educator*, 31(1):27.
- ⁴⁵See C. Ulrich (1977) 'The future hour: An educational view'. in R. Welsh (ed.) *Physical Education: A View Toward the Future*. St. Louis: Mosby. p. 133.
- ⁴⁶E.F. Zeigler (1979) 'Sport and developmental physical activity in world-wide perspective: a philosophical analysis', *Quest*, 31(1):12-24.
- ⁴⁷*Ibid.*, p. 22.
- ⁴⁸C. Lambert (1978) 'That's not physical education: or is it', *Journal of Physical Education and Recreation*, 49(2):30-31.
- ⁴⁹J.W. Loy (1980) 'The emergence and development of the sociology of sport as an academic specialty', *Research Quarterly for Exercise and Sport*, 51(1):91-109.
- ⁵⁰R. Park (1981), *op. cit.*, pp. 38-40.
- ⁵¹The tendency toward specialisation and fragmentation was observed by some authors in the late

1970s. See F. Henry (1978), *op. cit.*; and J. Broekhoff (1979) 'Physical education as a profession', *Quest*, 31(2):244-254.

⁵²H. VanderZwaag (1981) 'What the profession was once like: physical education 1906-1970', *The American Academy of Physical Education*, 15, 21-26.

⁵³D.A. Rose (1986) 'Is there a discipline of physical education?' *Quest*, 38, 1-21.

⁵⁴M. Ellis (1988) 'Warning: the pendulum has swung far enough', *Journal of Physical Education, Recreation and Dance*, 59(3):75-78.

⁵⁵For an assessment of the impact of this report on physical education see J.E. Razor (1988) 'The Holmes Group Proposal and implications for physical education as a 'solid', subject matter (and other related problems)', *Quest*, 40(1):33-46; and M.G. Wade and J.A. Baker (1990), *op. cit.*, pp. 141-143.

⁵⁶C.B. Corbin and H.M. Eckert (1990) *The Evolving Undergraduate Major*. Champaign: Human Kinetics.

⁵⁷See *Quest*, Volume 42, December 1990.

⁵⁸C.E. Thomas (1991) 'Further reactions to Newell: a rose by any other name', *Quest*, 43(2):218-223.

⁵⁹M. Murray and B. Mann (1993) 'Is our professionalism showing or slipping', *Journal of Physical Education Recreation and Dance*, 64(7):30-32 and 35.

⁶⁰In Germany, the expressions 'Sportwissenschaft' and 'Sportwissenschaften' have replaced physical education. According to some scholars, there is no exact translation of these words into English. They are usually translated as 'sport science' and 'sport sciences' respectively. In this study we assumed this terminology as reference.

⁶¹See H. Haag (1979) 'Development and structure of a theoretical framework of sport science', *Quest*, 31(1):25-35.

⁶²G. Erbach (1964), *op. cit.*, pp. 74-82; and G. Erbach (1966), *op. cit.*, pp. 59-73.

⁶³R. Renson (1989), *op. cit.*, p. 240.

⁶⁴*Ibid.*, p. 240.

⁶⁵A. Marques (1992) 'Os Jogos Olímpicos e a Ciência do Desporto' (The Olympic Games and the Science of Sport), *Revista Horizonte*, 50:61-66.

⁶⁶J. Riordan (1981) *Sport under Communism: the USSR, Czechoslovakia, the GDR, China, Cuba*.

London: C. Hurst and Company.

- ⁶⁷H. Haag (1994) *Theoretical Foundation of Sport Science as a Scientific Discipline: Contribution to a Philosophy (Meta-Theory) of Sport Science*. Schorndorf: Verlag Karl Hofmann. p. 31.
- ⁶⁸E. Meinberg (1991) 'Ciência do Desporto: Balanço e Perspectivas' (Sport Science: Balance and Perspectives). in J.O. Bento e A. Marques (eds.) *As Ciências do Desporto e a Prática Desportiva*. Porto: FCDEF, Universidade do Porto. Vol. 1. pp. 41-51.
- ⁶⁹E. Meinberg (1991), *op. cit.*, pp. 41-51.
- ⁷⁰B. Nigg (1993) 'Sports science in the 21th century', *Journal of Sports Sciences*, 11:343-347.
- ⁷¹See G. Schindler, G. Schnabel and F. Trogisch (1977) 'A Ciência do Desporto e Suas Perspectivas de Evolução' (The Science of Sport and its Evolutionary Perspectives). in Y. Adam (ed.) *Desporto e Desenvolvimento Humano*. Lisboa: Seara Nova.
- ⁷²*Ibid.*, p. 100.
- ⁷³See K. Willimczik (1974) 'Trends in the Scientific Concepts Pertaining to Physical Education and Sport Sciences.' in U. Simri (ed.) *Concepts of Physical Education and Sport Sciences*. The Wingate Institute for Physical Education and Sport: Jerusalem. pp. 9-23.
- ⁷⁴H. Haag (1994), *op. cit.*, p. 31.
- ⁷⁵This part of the study is based on G. Schindler, G. Schnabel and F. Trogisch (1977), *op. cit.*, p. 104.
- ⁷⁶*Ibid.*, p. 99-100.
- ⁷⁷*Ibid.*, pp. 106-107.
- ⁷⁸R. Renson (1989), *op. cit.*, p. 240.
- ⁷⁹K. Willimczik (1974), *op. cit.*, p. 16.
- ⁸⁰H. Ries and H. Kriesi (1974) 'Scientific Model for a Theory of Physical Education and Sport Sciences.' in U. Simri (ed.) *Concepts of Physical Education and Sport Sciences*. The Wingate Institute for Physical Education and Sport: Jerusalem. pp. 175-198.
- ⁸¹R. Renson (1989), *op. cit.*, p. 241.
- ⁸²K. Willimczik (1992) 'Interdisciplinary Sport Science: A Science in Search of its Identity'. in H. Haag, O. Grupe and A. Kirsch (eds.) *Sport Science in Germany: An Interdisciplinary Anthology*. Berlin and Heidelberg: Springer-Verlag.

- ⁸³*Ibid.*, p. 8.
- ⁸⁴H. Haag (1994), *op. cit.*
- ⁸⁵*Ibid.*, p. 9.
- ⁸⁶*Ibid.*, p. 95.
- ⁸⁷P. Parlebás (1987) *Perspectivas para una Educacion Fisica Moderna* (Perspectives for a Modern Physical Education). Málaga: Universidad Internacional Desportiva de Andalucia. p. 6.
- ⁸⁸See J. Le Boulch (1966) *L'éducation par le Mouvemen*. Paris: Les Éditions Sociales Françaises and J. Le Boulch (1971) *Vers une Science du Mouvement Humain: Introduction à la Psychocinétique*. Paris: Les Éditions Sociales Françaises. In this study we have worked on the Portuguese and Spanish translations of these books. See J. Le Boulch (1979) *Educação pelo Movimento* (Education through Movement). Porto Alegre: Artes Médicas; and J. Le Boulch (1987) *Rumo a uma Ciência do Movimento Humano* (For a Science of Human Movement). Porto Alegre: Artes Médicas.
- ⁸⁹P. Parlebás (1971) 'Pour une Épistémologie de L'éducation Physique.' *Éducation Physique et Sport* (For an Epistemology of Physical Education). 110, 15-22.
- ⁹⁰P. Parlebás (1987), *op. cit.*, pp. 3-56.
- ⁹¹There is no exact translation of the term 'conducta motriz' into English. In the context of this study we employed the word 'motor conduct'. However, the expression 'motor behaviour' also relates to that term.
- ⁹²*Ibid.*, p. 11.
- ⁹³We had no access to this publication. However, it seemed important to mention it here to demonstrate that the debate is still ongoing in France. See C. Bayer (1990) *Epistemologie des Activites Physiques et Sportives* (The Epistemology of Physical Activities and Sport). Paris: PUF.
- ⁹⁴See R. Renson (1989), *op. cit.*, p. 238.
- ⁹⁵See M. Sérgio (1979) 'Prolegómenos a uma Ciência do Homem' (Prolegomena to a Science of Man), *Ludens*, 4 (1):19-29; and R. Renson (1989), *op. cit.*, p. 238.
- ⁹⁶*Ibid.*, p. 238.
- ⁹⁷A. Sheedy (1974) 'Towards a Theory of Physical Education: Possibility and Conditions of Realization'. in U. Simri (ed.) *Concepts of Physical Education and Sport Sciences*. The Wingate Institute for Physical Education and Sport: Jerusalem. pp. 213-264.

- ⁹⁸C. Bouchard (1976) 'The physical activity sciences: a basic concept for the organisation of the discipline and the profession', *International Journal of Physical Education*, 13(3):9-15 and 13(4):10-15.
- ⁹⁹C.W. Hackensmith (1966) *History of Physical Education*. New York: Harper and Row. pp. 186-187.
- ¹⁰⁰R. Renson (1989), *op. cit.*, p. 243.
- ¹⁰¹For more on this issue see R. Renson (1989), *op. cit.*, pp. 242-244.
- ¹⁰²*Ibid.*, p. 244.
- ¹⁰³*Ibid.*, p. 247.
- ¹⁰⁴D.B. Van Dalen and B.L. Bennett (1971) *A World History of Physical Education: Cultural, Philosophical and Comparative*. Englewood Cliffs: Prentice Hall. pp. 344-347.
- ¹⁰⁵K. Rijdsdorp (1975) 'Gymnology: the philosophy and science of motor action in an agogical framework', *International Journal of Physical Education*, 12(3):10-13.
- ¹⁰⁶See K. Rijdsdorp (1975), *op. cit.*, p. 10 and R. Renson (1989), *op. cit.*, p. 256.
- ¹⁰⁷J. Casterlanas, C. Durán, F. Lagardera, G. Lasierra, P. Lavega, M. Maten and P. Ruiz (1992) 'Necesidad de una disciplina praxiológica para el conocimiento de las acciones deportivas expresivas y lúdicas' (The need of a praxiological discipline for the understanding of sport, expression and recreation actions), *Symposium de Filosofia del Deporte*, Barcelona, 127-133.
- ¹⁰⁸See M. Sérgio (1996) *Epistemologia da Motricidade Humana*. (The Epistemology of Human Motricity) Lisboa: Faculdade de Motricidade Humana, Universidade Técnica de Lisboa. p. 166.
- ¹⁰⁹J. Crespo (1992) 'A educação física: a reestruturação de uma identidade' (Physical education: the reconstruction of an identity), *Revista Horizonte*, 48, 217-222.
- ¹¹⁰M. Sérgio (1974) *Para uma Nova Dimensão do Desporto* (For a New Dimension of Sport). Lisboa.
- ¹¹¹M. Sérgio (1979), *op. cit.*, pp. 19-29.
- ¹¹²F. Sobral (1987) 'Motricidade humana, sistema das ciências e ciências do desporto' (Human motricity, the system of sciences and sport sciences), *Ludens*, 11(2):7-12.
- ¹¹³A preliminary account of this model is provided in A.R. Reppold Filho (1996) 'The Emergence and Development of the Biological Model of Physical Education in Brazil', *Proceedings of the International Conference Images of Sport in the World*. Cologne: German Sport University.
- ¹¹⁴For more on this topic see C.L. Soares (1991) *O Pensamento Médico Higienista na Educação Física*

Brasileira (The Hygienist Doctors' Ideas in Brazilian Physical Education). Universidade de Campinas, Dissertação de Mestrado.

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- ¹¹⁶V.M. Oliveira (1983) *O Que é Educação Física?* (What is physical education?). São Paulo: Brasiliense.
- ¹¹⁷J.P.S. Medina (1983) *A Educação Física Cuida do Corpo e Mente* (Physical Education Deals with Body and Mind). Campinas: Papirus.
- ¹¹⁸See M. Sérgio (1985) *Ciência da Motricidade: Uma Investigação Epistemológica*. (Science of Human Motricity: An Epistemological Investigation) Rio de Janeiro: Palestra; and M. Sérgio, M. (1989) *Educação Física ou Ciência da Motricidade Humana*. (Physical Education or Science of Human Motricity) Campinas: Papirus.
- ¹¹⁹J.B. Tojal (1994) *Motricidade Humana: O Paradigma Emergente* (Human Motricity: The Emergence of a Paradigm). Campinas: Unicamp.
- ¹²⁰*Ibid.* p. 166.
- ¹²¹U. Oro (1994) *Motricidade Humana, Critérios e Condições de Cientificidade: Um Paradigma em Perspectiva* (Human Motricity, Scientific Criteria and Conditions: A Paradigm in Perspective). Faculdade de Motricidade Humana, Universidade Técnica de Lisboa. Tese de Doutoramento; and K.B. Cavalcanti (1995) *Para a Unificação em Ciência da Motricidade Humana* (For Unification in the Science of Human Motricity). Faculdade de Motricidade Humana, Universidade Técnica de Lisboa, Relatório de Pós-Doutoramento.
- ¹²²J.B. Freire (1989) *Educação de Corpo Inteiro: Teoria e Prática da Educação Física* (The Entire Body Education: Theory and Practice of Physical Education). São Paulo: Scipione; and J.B. Freire (1991) *De Corpo e Alma: o Discurso da Motricidade Humana* (Body and Soul: the Discourse of Human Motricity). São Paulo: Summus.
- ¹²³A.A. Carmo (1985) *Educação Física: Competência Técnica e Consciência Política* (Physical Education: Technical Competence and Political Commitment). Uberlândia: Universidade Federal de Uberlândia; P. Ghiraldelli (1990) *Indicações para o Estudo do Movimento Corporal Humano da Educação Física a Partir da Dialética Materialista* (Notes for the Study of Human Movement from the

Perspective of Dialectics Materialism). Santa Maria: Universidade de Santa Maria.

¹²⁴R. Petersen (1991) 'O Estudo do Movimento Humano: uma Nova Perspectiva' (The Study of Human Movement: A New Perspective). in J.O. Bento e A. Marques (eds.) *As Ciências do Desporto e a Prática Desportiva*. Porto: FCDEF, Universidade do Porto. Vol. 1. pp. 379-391.

¹²⁵A.C. Gaya, (1994) *As Ciências do Desporto nos Países de Língua Portuguesa: Uma Abordagem Epistemológica* (The Sport Sciences in the Countries of Portuguese Language: An Epistemological Approach). Porto: FCDEF, Universidade do Porto.

¹²⁶G. Tani (1988) 'Pesquisa e Pós-graduação em Educação Física' (Research and Postgraduate Programs in Physical Education). in S. Passos (ed.) *Educação Física e Esportes na Universidade*. Brasília: Universidade de Brasília.

Chapter 3

The Academic Discipline of Physical Education

3.1 Introduction

In this chapter we focus on the theoretical justification of physical education as an academic discipline. The question addressed through its sections is whether there is, or there can be, an academic discipline of physical education.

In the previous chapter we outlined the search for the scholarly identity of physical education in several countries. In that historical overview we attempted to make clear that for many decades North American scholars, especially in the United States, have supposed that physical education is, or could be, an academic discipline. In that country, academics developed many views about the matter. The purpose of this part of the study is to examine a representative number of those views and assess whether they provide an adequate justification for the academic discipline of physical education.

We shall demonstrate that physical education is not an academic discipline. More specifically, we attempt to show that it is not a discipline in the sense of an au-

tonomous branch of knowledge.

The chapter comprises three sections. The first one presents the problem and the way we intend to deal with it throughout the chapter. The second, is a critical examination of the concept of academic discipline. We shall demonstrate that various interpretations of academic disciplines are misleading and point out the consequences this has for the attempts to establish a discipline of physical education. Section three focuses on the arguments for the justification of physical education as a cross-disciplinary field of study.

3.2 Posing the Problem

The question under investigation here may be posed in the following way: 'Is physical education an academic discipline?' The formulation of the problem in this manner offers some logical possibilities of an answer. For a better understanding of the situation we may put the problem in a more formalised fashion.

When we replace the terms 'physical education' for X and 'academic discipline' for Y in the question above, we get the type of formulation 'Is X a Y ?' Given that we give to X and Y suitable definitions, there are three logical possibilities of an answer.

- (1) X is a Y .
- (2) X is not a Y .
- (3) It is contingently possible for X to be or not to be a Y .

The decision whether (1), (2) or (3) is the correct answer depends to a large extent on what we mean by X and Y . As X stands for 'physical education' and Y for 'academic discipline' a preliminary step in the solution of this problem is to give suitable definitions of these terms.

Given the lack of agreement about the definition of physical education, let us start with academic discipline. We hope to show in the following section that this is a more

productive way to go. This is so because in refuting some misleading interpretations of academic discipline we consequently reject the arguments in favour of an academic discipline of physical education based on those interpretations. Therefore, it seems perfectly possible to advance in this investigation, at least up to a certain point, without providing a definition of physical education.

3.3 The Concept of Academic Discipline

The term academic discipline has a variety of meanings. Even though scholars differ considerably regarding its definition, some uses of this expression appeared more often than others during this study. The examination of some of these uses may assist us when attempting to determine whether physical education is an academic discipline. For the purposes of this study, the following seem to be the most relevant.

We may say that disciplines relate to: (a) administrative arrangements, (b) subject matter, (c) realm of things, (d) phenomenal classes, (e) special vocabularies, and (f) scientific laws and theories.¹ We shall now examine these definitions and the arguments for the justification of a discipline of physical education based on them.

3.3.1 Administrative Arrangements

This argument takes the view that academic disciplines are administrative arrangements. Each discipline is an academic unit around which institutions of higher education organise research and teaching activities.

We may describe this view as the following. The institutions of higher education have to be divided up according to some criteria. Many of them tend to make the division by faculties and departments. Considering that universities bring together a wide range of scholarly interests and are organised according to particular goals, their administrative structures follow different patterns. In this academic environment the term discipline is assumed in a pragmatic sense and employed with an administrative purpose. It relates to the way that universities, faculties and departments organise

their teaching and research activities. In this sense they are administrative arrangements.

This point may be illustrated in the following way. We often employ the expression 'discipline' when referring to the organisation of research and teaching in terms of large bodies of knowledge as, for example: the discipline of biology, or the discipline of philosophy. In other situations we use the term to refer to some particular portion of these large branches of knowledge. This happens when we say for instance, the discipline of zoology, or the discipline of ethics. We sometimes call discipline a smaller part or sub-division of these particular portions of knowledge. This is the case of the discipline of medical ethics, understood here as a sub-division of ethics.

There are other occasions, however, when the term is employed in a different way. Instead of referring to the organisation of academic activities in large branches of knowledge or particular divisions and sub-divisions of them, the expression is used for combinations of different bodies of knowledge and portions of them. This seems to be the case of disciplines linked to specific areas of practical interests and concern such as environmental pollution, urban transportation and material corrosion.

One last example can be drawn from the area of history. The discipline of ancient history centres on a specific period of time while history of religion focuses on a particular dimension of human experience. This is an interesting situation because it shows that even inside the same area we may organise research and teaching activities according to different criteria and still call them disciplines.

These examples are sufficient to illustrate the point that academic disciplines are administrative arrangements. They also show that disciplines do not follow a definite or fixed pattern. Indeed, these academic arrangements may have different configurations. Their function is solely administrative. In this respect they play a significant role in the organisation of research and teaching at the university level.

According to this argument any matter of academic interest could be an academic discipline. If this is true, then it would be perfectly possible to claim that physical education is a discipline. In fact, there is no reason to believe that physical education,

independently of what we mean by this term, could not be an academic discipline. There are many universities that already organise teaching and research assuming that physical education is a discipline.

Making an analogy with the situation described earlier, we could claim that sociology of physical education, physiology of exercise, sports biomechanics and motor learning are particular portions or sub-disciplines of physical education. As we saw in the earlier chapter, some scholars take this path. For instance, Katch (1990) presented a model for the academic discipline of physical education composed of sport anthropology, sport history, motor integration, etc.² Zeigler's (1990) system comprises exercise physiology, psychomotor learning and biomechanics among others.³ Similar proposals appeared in Vincent (1991), Thomas (1987), and Zeigler and McCristal (1967).⁴

Other scholars have attempted to organise the area according to another criterion. For them, physical education is a combination of particular divisions and sub-divisions of different bodies of knowledge. This seems to be the case of Henry (1978, 1981) when he argues that physical education is composed of 'certain portions of such diverse fields as anatomy, physics and physiology, cultural anthropology, history and sociology, as well as psychology.'⁵

What follows from the arguments presented here is that physical education is an academic discipline in the sense of an administrative arrangement for research and teaching. Of course, this does not imply that a department or faculty of physical education must exist. It is possible that research and teaching activities related to physical education be located in other departments. This does not imply either, in the case of a department of physical education exist, that the disciplines and sub-disciplines mentioned in the examples above should be located in that department and taught by staff with degrees in the area though this seems to occur in most institutions.

So, if we have research and teaching activities organised in terms of physical education and departments and staff dealing with this area, why do people bother with this kind of question? Is not physical education already an academic discipline?

This is not a difficult question to answer. Several scholars have indeed engaged in the justification of an academic discipline of physical education thinking that this would allow a better organisation of teaching and research in this area. There are strong reasons to believe that these people acted properly. To confirm this claim we just have to consider the large number of institutions that currently organise graduate and undergraduate programs in the area. This leads us to answer the question above in the following terms: if we assume that academic disciplines are administrative arrangements, then physical education is an academic discipline.

There is, however, an important aspect to be considered here. It is not only for administrative convenience that most scholars have engaged in the effort to justify an academic discipline of physical education. They have done so especially because they believe that physical education is, or can be, an academic discipline in the sense of an autonomous branch of scientific knowledge. Therefore, the conclusion we arrived at in this section is related to part of the arguments put forward for the justification of the area as an academic discipline. We must then move ahead in this investigation and examine how the term academic discipline can be related to branches of knowledge.

3.3.2 Subject Matter

The argument examined here takes the view that academic disciplines are distinguished from each other by the subject matter they refer to. According to this view, there is a correlation between disciplines and subject matter. Each academic discipline is in possession of and concerns itself with a unique subject matter that is not included or treated in the same way by any other discipline.

We may illustrate this point with the follow example. Consider physics and biology. These areas have usually been regarded as academic disciplines. Following the argument above, we would say that they are disciplines because they relate to particular and exclusive subject matter.

Now, let us take the case of physical education. Suppose that this area wants to develop into an academic discipline. According to that view, what would make it a

discipline is that it is concerned with a subject matter that is not under the jurisdiction of any other discipline. Therefore, an acceptable way to get there is through the demarcation of a subject matter proper to the area.

This is the sort of argument presented by many of scholars when attempting to justify an academic discipline of physical education. It seems that the authors that argue for the demarcation of the body of knowledge of physical education as a condition for the development of an academic discipline are based on this view. For them, to be a discipline is to be a body of knowledge. Cheffers and Eval (1978), for example, argue that the acceptance of physical education as an academic discipline means that it possesses a body of knowledge or subject matter with a unified focus.⁶

The idea that disciplines relate to subject matter has been the subject of severe criticism. Popper (1991) points out that it is a mistake to think that academic disciplines are distinguishable by the subject matter they investigate. According to the author, this type of distinction is only possible at a very basic level.⁷ He argues that this is a naive belief. It supposes the existence of such entities as 'philosophy', 'physics', or 'biology' and that they have a certain character or essence or nature.⁸

For Popper, we do not study subject matter but problems and the latter may cut across disciplines and subject matters. Problems emerge out of expectations, theories and empirical tests derived from them. Therefore, theories and not subject matter may comprise a discipline.

Other scholars are also critical regarding this view of disciplines. For Peters, the notion that disciplines have subject matter just make sense if one is trying to distinguish disciplines at a low level of theoretical development from each other.⁹

We may illustrate the difficulty to accept the view that disciplines relate to subject matter by the following examples. Consider the problem of improving the performance of an athlete. The solution of such a problem would involve theories and techniques usually considered physiological, physical and psychological to mention some. Let us take as a second example the assessment of the causes of sport violence. In this case, sociological, psychological and historical theories would help in

the resolution.

The argument above leads us to the conclusion that disciplines do not relate to subject matters. Therefore, any attempt to justify a discipline of physical education based on this idea is mistaken. There is no need to define physical education here since the argument is not affected by what we mean by this term or how we characterise its subject matter.

3.3.3 Realm of Things

This argument takes the view that academic disciplines are distinguishable from each other by the realm of things they relate to. According to this view, there is a correlation between realms and disciplines. Each discipline applies to a unique realm and each realm supports only one discipline. We may illustrate this view as follows: realm R_1 supports discipline D_1 , realm R_2 supports discipline D_2 , realm R_3 supports discipline D_3 and so on.

The correlation between realms and disciplines does not imply a discipline for every realm. Since the only requirement is that every discipline be supported by a realm of things, it is possible that some realms are not the object of any discipline. This view is quite appealing since it offers the possibility of as many disciplines as realms of things. We can infer from it that the development of a new discipline may be supported by a realm that is not the subject of any discipline already in existence.

This seems to be the view that sustains many of the arguments for the justification of an academic discipline of physical education. According to them, what makes physical education an academic discipline is that it relates to a particular realm of things that is not considered by any other discipline. The realm of things of physical education has been characterised in many ways. However, sports, games, dance, outdoor activities and gymnastics are commonly considered elements of this realm.

There are at least three reasons to believe that this idea is mistaken. The first criticism raised against this view is that not only one but a variety of disciplines may

be supported by elements of the same realm of things. We need no more than some examples to illustrate this point. Let us take the realm of animals. There are at least two disciplines that take elements of this realm as their subject, namely biology and psychology. For a second example we could look at the realm of minerals. In this case, disciplines such as chemistry and geology are supported by elements of this realm. For a final example, let us examine the realm of human beings. Here we can easily make a list of disciplines supported by this realm, e.g. biology, psychology and anthropology.

There is a second important argument against the correlation between disciplines and realms.¹⁰ This notion seems to contain a contradiction. We can illustrate this point in the following way. The correlation establishes that a given realm of things, let us say R_1 , supports one and only one discipline D_1 . If this is the case, then all the general truths concerning the elements of the realm are included in that discipline. A similar situation occurs with realm R_2 . That is to say that all the general truths related to the elements of this realm are included in the discipline D_2 . In these conditions no contradiction emerges. If it happens, however, that a discipline associated with the realm $R_1 + R_2$ also exists, then this discipline would contain truths related to R_1 and R_2 . What follows is that some truths would fall under the domain of more than one discipline, contradicting the principle that a particular realm of things supports one and only one discipline.

Another problem that emerges from such a view is that reproducing the situation above for an infinite number of times we arrive at a discipline that contains all disciplines, that is to say, a discipline that comprises all general truths regarding every possible realm. Let us put this situation in a more formalised way. This will help to illustrate the type of problem we are concerned with here. Consider that realm R_1 supports discipline D_1 and realm R_2 supports discipline D_2 , and that all the truths regarding the elements of these realms belong to their respective disciplines. As we have seen, it is logically possible that a realm R_3 composed of $R_1 + R_2$ supports a discipline D_3 . In this case all the general truths regarding R_1 and R_2 would also belong to the domain of D_3 since this discipline contains D_1 and D_2 . If we reproduce this situation for an infinite number of times we arrive at a discipline D_{1+n} . Putting

the matter another way, we get to a discipline that comprises all disciplines.

Accepting this argument is to accept the idea of a meta-discipline from which all others could be reduced. It is rather difficult to image a discipline that could contain all the truths of physics, biology, sociology, psychology, etc.

The example above also illustrates the difficulties posed by the notion of realm of things. In that situation we have a realm that is composed of all other realms. There are, however, a number of possible ways to conceive realms. We may think about a realm composed of only one element. As we saw earlier, the correlation realms-disciplines does not entail a discipline for every realm. However, according to this view, it is perfectly possible to have a discipline supported by a realm composed of only one element. This situation seems to conflict with the idea of science posing general statements regarding the behaviour of the world.

The arguments presented in this section lead to the conclusion that any attempt to justify an academic discipline of physical education based on the idea that it relates to a particular realm of things is mistaken. Since this conclusion is valid independently of what we mean by physical education, there is no need to deal with the definition of this term here.

3.3.4 Phenomenal Classes

This argument takes the view that academic disciplines are distinguishable from each other by the phenomenal classes they relate to. There is a correlation between phenomenal classes and disciplines. Each discipline applies to a unique phenomenal class and each phenomenal class supports only one discipline.

This view is slightly different from the one we examined previously. In the case of a realm of things we were dealing with objects. In phenomenal classes we are concerned with aspects or properties of things. What is in question here is the possibility of two or more disciplines to focus on different properties of the same object.

The following example helps to understand this view. Consider a person. We could

say that the mass of this person is a physical entity. Therefore, it belongs to the domain of physics. In the same way, we could state that her behaviour comprises the sphere of psychology and the way her body works constitutes the focus of biology. In this situation a single object might be the subject of several disciplines.

The correlation between phenomenal classes and disciplines does not require that we have a discipline for every phenomenon. Some phenomena may not be the subject of any discipline. It only requires that every discipline be supported by a phenomenal class. This leaves the possibility open for as many disciplines as phenomenal classes.

This sort of argument seems to support many attempts to establish an academic discipline of physical education. Since it is perfectly possible that a particular class of phenomena is not the subject of any of the already established disciplines, it may be the focus for the development of a new one. According to this view, what makes physical education a discipline is that it refers to a particular phenomenon.

There is some agreement among physical educators that adopt this view that physical education is concerned with the phenomenon of human movement. For instance, Ojeme (1990) argues that the focus of the area is on man and his movements.¹¹ However, there are scholars that prefer to focus on humans in movement. This seems to be the case of Studer (1973).¹² The arguments in favour of exercise and physical activity may also be included here.

The correlation between disciplines and phenomenal classes raises the same sort of criticism mentioned when we examined the case of the realm of things. Following that criticism, we could argue that there is more than one discipline supported by the same class of phenomena.

The argument also contains the contradiction mentioned earlier. Suppose that phenomenon P_1 and phenomenon P_2 support unique disciplines, let us say D_1 and D_2 respectively. If a third discipline composed of $P_1 + P_2$ also exists, then some truths fall under the jurisdiction of more than one discipline. This is in contradiction with the idea that a particular phenomenon is the subject of only one discipline.

In attempting to avoid this contradiction, some authors have proposed the following

situation. Suppose that the correlation of disciplines and phenomenal classes holds only for pure phenomenal classes, e.g. the class of pure biological or pure sociological phenomena.¹³ We now have a discipline D_1 supported by a pure phenomenal class P_1 and a discipline D_2 supported by a pure phenomenal class P_2 . This would prevent the situation of a third discipline composed of $D_1 + D_2$ mentioned above. There is some attraction in such a proposition. Besides avoiding the contradiction, it makes it possible for more than one discipline to focus on the same realm of things.

However, the notion of pure phenomenal classes runs into difficulties when we examine some classes of phenomena that belong to the everyday of many scientists, for example physical-biological, social-psychological and biological-chemical. In accepting the notion of pure classes, we rule out the possibility of this type of 'mixed' phenomena being the subject of any discipline. This view leads us to the strange situation of relegating such phenomena to obscurantism. Putting the matter another way, we are able to give a scientific treatment to them.

There is a second problem connected to the definition of pure phenomenal class. It seems that the notion is so artificial that it becomes impossible to apply it to any practical situation. How would we determine whether a given phenomenon is biological or chemical? It is difficult to imagine any satisfactory definition that demarcates clearly such limits. Therefore, despite its logical validity, such a notion is of very restricted relevance for the demarcation between academic disciplines.

The arguments above lead us to the conclusion that any attempt to justify an academic discipline of physical education based on the idea that it relates to a particular phenomenal class is mistaken. Here again, we have no need to define physical education since those arguments are not affected by what we mean by the term physical education.

3.3.5 Special Terminology

This argument takes the view that academic disciplines are distinguishable from each other by the vocabulary used in descriptions and explanations. There is a correlation

between vocabularies and disciplines. Each discipline is in possession of or makes use of a particular vocabulary and each vocabulary supports only one discipline.

Accordingly, disciplines are characterised by their distinctive linguistic apparatus. They may be described as bodies of systematised information expressed by special vocabularies. The situation we have now is the following: disciplines may look at similar objects and phenomenal classes. However the language they use to describe and explain them is different.

Following this argument, what makes physics a discipline is that it employs a special vocabulary (e.g., protons, centre of gravity, electromagnetic radiation, etc.) to describe and explain some particular properties of the world. In the same way, biology uses concepts such as cell, mitochondria and Krebs cycle; and sociology employs: class struggle, social stratification, ideology and globalisation.

There are some scholars in physical education that sustain their arguments by this view. According to them, among other requirements, what would guarantee to physical education the status of an academic discipline is the development of a distinctive vocabulary.

There is a major criticism of this view. While it is true that there is some degree of distinction between vocabularies, it is also true that on most occasions they overlap. For example, physics makes use of mathematical terms; chemistry overlaps many times with biology and physics; sociology and history quite often employ similar conceptualisation. In practice, such distinction among vocabularies seems not to be achievable. Even if it was possible to make this distinction, the consequences of such an attitude would probably be the impossibility of any formulation about the properties and behaviour of world. Perhaps only logic and mathematics would survive as disciplines.

Some scholars have attempted to overcome such a problem by introducing the notion of presuppositional order among the disciplines. We could assume that chemistry, for example, presupposes physics and is in turn presupposed by biology.¹⁴ According to this view, any statement composed of terms belonging to more than one special

vocabulary is assigned to the discipline that ranks higher in the presuppositional order.

The problem with the notion of presuppositional order is that it is based on the belief that disciplines can be reduced one to another. The procedure here would be to classify disciplines according to their stage of theoretical development. For instance, we could argue that physics is a discipline in a higher level at the presuppositional order because it is more theoretically developed than biology. The scientific models of the former would be applied to the elucidation of problems related to the latter. We need then a criterion to classify disciplines according to their stage of theoretical development. That is to say that it is not enough to demonstrate that the terms of a given discipline are reducible to the terms of a second one. It is also necessary to show that the principles of one discipline are derived from the principles of another. Therefore, special vocabularies are not a sufficient condition to distinguish disciplines. This takes us to a second and more cogent criticism to this notion.

It seems that a given term may be definable in the vocabulary of a discipline but does not actually belong to its domain. For example, supposing that the terms 'father' and 'married' are definable in the terminology of the discipline 'A'. In this case, the statement: 'Some fathers are not married' belongs to the discipline 'A'. If it is true that this statement belongs to the language of the discipline 'A', then its negation: 'All fathers are married', also belong to it. As a consequence, discipline 'A' turns out self-contradictory. In fact, these statements may not belong to the set of theories of discipline 'A' even though their terms may be definable in its terminology. This seems to indicate that theories and not special vocabularies demarcate the domain of a discipline.

The arguments above lead us to the conclusion that the attempts to justify an academic discipline of physical education based on the idea that it relates to a particular vocabulary is mistaken. As in the previous parts there is no need to define physical education since the arguments presented here are not affected by the definition of this term.

3.3.6 Theories and Scientific Laws

The argument examined in this section takes the view that academic disciplines are distinguished from each other by theories and scientific laws. There is a correlation between disciplines and theories. Each discipline refers to a scientific theory.

Let us examine whether this argument is adequate. If we assume physics as a model for a discipline, it seems that we cannot talk about 'the physical theory'. There are a number of theories under the designation 'physics'. For this reason, it is more correct to say that physics consists of a set of theories more or less integrated.

For the sake of the argument, let us suppose that disciplines consist of more or less integrated systems of theories. If we look at chemistry, for example, we see that some basic theories from physics are presented there. The same sort of situation occurs in biology. Therefore, a distinction between disciplines based on this criterion run into difficulties. To a certain degree the boundaries of disciplines are not precisely the boundaries of theories.

However, if the arguments presented in this chapter are correct, then the best characterisation of academic discipline we get up to this point is that it refers to scientific theories. It is worth to mention that the idea that disciplines are related to systems of theories is supported by studies in the history of science. For Popper, disciplines appear only in a more advanced stage of development of a given problem-solving situation. First, problems emerge from expectations and pre-scientific conceptions of the world. Then, we move to systematic attempts to answer them. When we have reasonable structured and well-worked answer to such problems a body of knowledge is formed. This together with techniques to test and develops better answers comprise a discipline.¹⁵

Therefore, let us take the definition of disciplines presented above and examined the case of physical education. The problem emerged from such an approach is that to be considered a discipline physical education has to fulfil the following condition: it has to be described as a more or less logical integrated system of theories. This raises the question 'Is there any system of theories in physical education?' If so, 'Are these

theories logical integrated?’

To make the argument easy let us assume that physical education is concerned with the study of human movement. We could have chosen sports, games and gymnastics, dance, outdoor activities and recreation or any other of the traditional characterisations of the area.

If we look at problems related to the internal mechanisms involved in the human movement, for example, muscle contraction, how would these processes be described and explained? It seems logical that if someone wants to examine this problem the most appropriate theoretical framework and empirical methods are those of biology, chemistry, physics and so on. When we examine the external factors related to the human movement, physics, anthropology and sociology provide the theoretical framework.

The point we want to make is that when someone is asking questions about any sort of movement, the theories involved belong to the domain of the established disciplines. At the moment, it does not seem to exist any other way to ask and answer questions proper to physical education. All the relevant problems are examined through the theoretical and methodological framework of the established disciplines. Therefore, we may say that there are a number of theories focusing on aspects related to physical education. However, these theories do not comprise an integrated system. To integrate these theories in a logical system does not seem to be achievable.

Assuming that the relevant sense in which we can talk about disciplines is when they refer to more or less logical integrated systems of theories, the arguments above lead to the conclusion that physical education is not an academic discipline.

3.4 Cross-Disciplinary Approach

In the previous section we examined some disciplinary approaches. However, some scholars have proposed another way to deal with the problem. Terms such as ‘multidisciplinary’, ‘interdisciplinary’ and ‘cross-disciplinary’ are often used to describe

different types of collaboration between and within disciplines. These expressions have been also applied to describe the academic nature of physical education.

Renson (1989) produces a classification of the arguments for the justification of physical education as multidisciplinary, interdisciplinary and cross-disciplinary.¹⁶ In this section we look at the arguments in favour of a 'cross-discipline' of physical education in an attempt to find a satisfactory solution to the problem of the scholarly identity of the area. In order to focus on these arguments, it seems important to distinguish among the three approaches just mentioned and illustrate them with the use of some examples.

The multidisciplinary approach could be describe roughly like that. Different disciplines work together on a specific problem, but there is little, if any active collaboration among them. Each discipline concentrates on those aspects of the problem concerned with its domain. The multidisciplinary approach requires that every discipline do its thing with no need of being aware of the work of the others involved.

Applying this notion to the area of physical education, we would have a group of disciplines examining particular problems related to, for example, the human movement or sport. Each of these disciplines would concentrate on features concerned to its domain. For instance, a group of sports physiologists examines some aspects of sport while the sociologists of sport focus on others. There is no communication between the two groups.

The multidisciplinary approach seems to be very common in physical education. The area could well be classified under this title. However, this approach does not lead to the integration of knowledge aimed by physical educators. It seems that scholars actually want to transcend this way of dealing with problems in the area. Therefore, multidisciplinary could be the cause of the lack of identity of physical education but never its solution since through this approach no autonomous branch of knowledge is achieved.

A second approach has been suggested by some physical educators. They argue that it is important to conceive physical education as an interdiscipline. The basic

assumption is that the nature of the area requires interdisciplinary. The definition of interdisciplinarity posed by Lovisolo (1995) offers a framework for the examination of the relationship among disciplines.

The author presents a description of the concept of interdisciplinary divided in three levels. For him, at a very basic level the term refers to the use of concepts and theoretical models from one discipline on higher stage of development into another on lower. At a second level, the expression denotes a dialogue among disciplines where each of them contributes with theories and concepts to solve practical and theoretical problems. At a higher level it is an integrative construction where the disciplines involved go beyond their partial views building a new conceptual and theoretical unit.¹⁷

The positive aspect of this definition is that it allows us to discern three possible uses of the expression even though the first definition of the term seems to run into difficulties since it presupposes a classification of sciences. For this reason, we do not consider this definition appropriate. The second and third uses of the expression seem to be more adequate.

We may infer from them that an interdisciplinary approach involves co-operative efforts by several disciplines in the examination of a particular problem or subject. It requires some level of integration and, in the third case, even alteration of the disciplines involved. Each discipline needs to take the contributions of others into account. There is exchange of concepts, data and regular consultation. Each discipline relates the activities to its own theoretical interest though the elucidation of the issue as a whole can only be achieved by a common research activity.

To illustrate this point let us take the case of assessing the causes of football hooliganism. Here, sport sociologists, sport psychologists and historians could work together. Some level of integration would be required and each discipline would take into consideration the achievements of the others. A more complete explanation of the matter can only be reached by a common effort.

This approach seems to arrive at more productive results since it presupposes certain

level of integration among the disciplines. However, while it is true that in some situations the interdisciplinary approach may help and even be the only way to find a proper explanation, in others, interdisciplinarity seems to be impossible to achieve. We are thinking about some particular problem related to the muscle performance during the exercise. For sure, biochemistry and physics may work together, perhaps even psychology, however what contribution sociology and history could give to the elucidation of such problem. Therefore, one may argue that some level of integration is possible in an interdisciplinary approach. However, as a whole, physical education cannot reach the stage of an autonomous branch of knowledge through interdisciplinarity.

Another attempt to find an appropriate justification for physical education as a branch of knowledge is based on the concept of 'cross-discipline'. Since interdisciplinary and multidisciplinary did not take physical education to the expected theoretical autonomy, some scholars have argued that 'cross-disciplinarity' would be the solution. As mentioned in chapter 2, this concept was presented for the first time in the area of physical education by Henry (1978, 1981).¹⁸ Currently, Renson (1989) is the main representative of this trend.¹⁹ These scholars try to show that the notion of cross-discipline goes a step further. This is so because it presupposes that each discipline loses a part of its identity in favour of the construction of a new one.

There is an aspect related to the idea of cross-disciplinarity that deserves attention. We are not sure whether cross-disciplinarity differs substantially from interdisciplinarity. Both concepts require certain levels of integration among the disciplines involved in the investigation of a given problem-situation. According to Renson, the notion of cross-disciplinarity affords a more integrative approach to the problems investigated by physical education. For this author, the main difference between them is that interdisciplinarity leads only to a partial integration. It seems that for this author cross-disciplinarity takes to a complete integration. If this is the case, then we return to the concept of 'monodisciplinary' approach. That is to say, a model of inquiry that does not require any kind of partnership with other disciplines. In the case under examination either we have monodisciplinary or interdisciplinarity. Putting the matter another way, what we want to show here is that the concept of cross-

disciplinarity is misleading.

One could argue that cross-disciplinarity though not leading to a complete integration provides a higher level of integration than interdisciplinarity. Even though it would be difficult to assess the degree of integration among disciplines let us assume, for the sake of the argument, that cross-disciplinarity is a concept that implies a more integrative stage of relationship among disciplines. If this is the case, then we would agree that cross-disciplinarity is a step further in relation to the establishment of an autonomous branch of knowledge related to physical education.

However, it seems that to achieve the stage of an autonomous branch of knowledge pursued by some physical educators, it is necessary that the concepts and theories that belong to the various disciplines related to the area are somewhat logical integrated. As far as we are concerned, neither Henry nor Renson have provided any new theoretical approach to the area of physical education showing that such logical integration has been achieved. Therefore, for the time being, we would say that cross-disciplinarity has not led to the academic autonomy of the area.

3.5 Conclusion

In this chapter we examined the attempts to justify physical education as an academic discipline. We looked at various definitions of academic discipline and arrived at the conclusion that the most relevant sense of the term is when it implies some connection with scientific theories and laws. We then assumed this rather specific sense of discipline and investigated whether physical education could meet with its requirements. As a conclusion we may say that physical education is not, and can not be, an academic discipline.

Notes

- ¹A significant part of this classification derives from I. Scheffler (1963) 'Is Education a Discipline?' in J. Walton and J.L. Kuethe (eds.) *The Discipline of Education*. Madison: The University of Wisconsin Press.
- ²F.I. Katch (1990) 'Response to Franks' Paper'. in C.B. Corbin and H.M. Eckert (eds.) *The Evolving Undergraduate Major*. Champaign: Human Kinetics. p. 55.
- ³E.F. Zeigler (1990) 'Don't Forget the Profession When Choosing a Name.' in C.B. Corbin and H.M. Eckert (eds.) *The Evolving Undergraduate Major*. Champaign: Human Kinetics. p. 75.
- ⁴M.J. Vincent (1991) 'Kinesiology the proper name for the discipline,' *Physical Educator*, 48(3):119-122; J.R. Thomas (1987) 'Are we already in pieces, or just falling apart', *Quest*, 39(2):114-121; and E.F. Zeigler and K. McCristal (1967) 'A history of the Big Ten body of knowledge project', *Quest*, 9:79-84.
- ⁵F.M. Henry (1981) 'Physical education: an academic discipline.' in G.A. Brooks (ed.) *Perspectives on the academic discipline of physical education*. Champaign: Human Kinetics. p. 11; and F.M. Henry (1978) 'The academic discipline of physical education', *Quest*, 29:13-29.
- ⁶H. Cheffers and T. Eval (1978) *Introduction to Physical Education: Concepts of Human Movement*. Englewood Cliffs: Prentice-Hall.
- ⁷K.R. Popper (1991) *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge.
- ⁸*Ibid.*, pp. 66-67.
- ⁹R.S. Peters (1963) 'Comments'. in J. Walton and J.L. Kuethe (eds.) *The Discipline of Education*. Madison: The University of Wisconsin Press. p. 17.
- ¹⁰See I. Scheffler (1963), *op. cit.*, p. 52.
- ¹¹E.O. Ojeme (1990) 'A search for logical sequence of knowledge in physical education: some preliminary statements', *International Journal of Physical Education*, 27(3):9-15.
- ¹²G. Studer (1973) 'From man moving to moving man', *Quest*, 20:104-107.
- ¹³See I. Scheffler (1963) *op. cit.*, p. 52-53.
- ¹⁴*Ibid.*, pp. 55-57.
- ¹⁵See K.R. Popper (1991) *op. cit.*, p. 38 and 50. This author argues that historically speaking nearly

all scientific theories originate from myths and that a myth may contain important anticipation of scientific theories.

¹⁶R. Renson (1989) 'From physical education to kinanthropology: a quest for academic and professional identity', *Quest*, 41(3):235-256.

¹⁷H. Lovisolo (1995) *Educação Física: A Arte da Mediação* (Physical Education: The Art of Mediating). Rio de Janeiro: Sprint.

¹⁸See F. Henry (1978), *op. cit.*, pp. 10-15; and F. Henry (1981), *op. cit.*, pp. 13-29.

¹⁹R. Renson (1989), *op. cit.*, 235-256.

Chapter 4

The Science of Sport

4.1 Introduction

In this chapter we are concerned with the theoretical justification of sport science. The question addressed through its sections is whether there is, or there can be, a science of sport.

In the previous chapters we examined many positions regarding the scholarly identity of physical education. There we attempted to show that physical educators in North America, specially in the United States, have worked on the topic mostly from the perspective of an academic discipline. In this part of the study we focus on the matter from the position of the German scholars. As their American counterparts, they have for decades supposed that the area we traditionally refer to as physical education is, or could be, an autonomous branch of knowledge. Their approach, however, is different. They have attempted to solve the problem through the notion of sport science. The purpose of this chapter is to submit to critical examination the arguments of a representative number of scholars that support this view.

The chapter comprises four sections. In the first one we present the problem and the way we intent to deal with it throughout the chapter. In the second we look at

several descriptions of science drawing special attention to the demarcation criteria between science and non-science. Section three deals with the concept of sport. The final section examines the arguments for the justification of sport science based on the ideas developed in the previous sections.

4.2 Posing the Problem

Many academics interested in the scientific investigation of sport have assumed that there is indeed a science of sport. The underlying assumption among those that support this position is that 'sport science' is, or can be, an autonomous body of knowledge related to sport. Sociology of sport, history of sport, physiology of sport and biomechanics of sport are often considered to be some of its specialities or sub-areas. Other scholars have been more sceptical about the existence of a science of sport. They argue that a satisfactory justification is still missing.

Assuming that the above description correctly portrays the views of a great number of scholars dealing with sport, the question we would like to investigate in this chapter may be posed in the following way: 'Is there such thing as a science of sport?'

We could take here the same line of argumentation followed in the previous chapter and say that the answer to this question depends in great extension on what we mean by the terms 'science' and 'sport'. Therefore, two major questions would emerge from the outset. First, what is understood by science and second what is understood by sport.

In most occasions those scholars attempting to answer the first question have taken the view that sciences are organised and differ from each other in terms of (a) subject matter, (b) realm of things, (c) phenomenonal classes and (d) special vocabularies. These attempts tend to equate the term 'science' with some definitions of academic discipline examined earlier in this study.

In this respect, we may say that the arguments in favour of sport science are essentially the same as the arguments for the justification of an academic discipline of physical

education. According to those views, for the so-called 'sport science' to qualify as a science, it would be necessary to clearly demarcate, for example, a subject matter (or any of the other possibilities mentioned above) that is not under the jurisdiction of any of the already established sciences.

There is a problem in accepting such ideas of science. As we attempt to show in the previous chapter, academic disciplines cannot be conceived in any of those ways. If it is correct that many scholars regard the terms 'science' and 'academic discipline' as equal or equivalent, then any attempt to justify sport science based on those notions is subject to the same sort of criticism presented there. This leads us to the conclusion that there is no such thing as a science of sport.

However, it would be scarcely correct to state that all scholars attempting to justify sport science take one of these veins of argumentation. There are some important distinctions to be made here. First, some of the arguments in favour of sport science are essentially but not exactly the same as those for an academic discipline of physical education. It seems that the former take more seriously the idea that sciences are organised in terms of theories. In this respect, they equate the concept of science with the last sense of term 'academic discipline' examined in chapter 3 though their arguments are more sophisticated. According to this view, the development of a theory of sport is a necessary condition for the justification of a science of sport. Therefore, the question to be answered is whether sport science satisfies such condition. Putting the matter another way, it is necessary to address the problem of whether there is such thing as a theory of sport.

There is a second important aspect to mention. There are some characterisations of science that do not equate it with any of the concepts of academic discipline examined before. For instance, some scholars have attempt to show that what makes science a peculiar enterprise is its method. On the basis of this idea, one could argue that for sport science to rank as a science it must fulfil the requirements posed by that definition. This is to say that the general assertions and explanations (laws and theories) about the phenomenon of sport put forward by the so-called sport scientists can only be considered scientific if they are a result of the correct application of the

scientific method. The situation becomes more complex in so far as we realise that some scholars have challenged this view and proposed rather different characterisations of science. These remarks suggest that the analysis of the nature of science carried out in this study has to include these accounts as well in order to reach any conclusion about the scientific status of the science of sport.

There is a last aspect to draw attention before we go on in this study. For some scholars the investigation about sport relies in great extension on the understanding of its nature or essence. For instance, how could one inquiry into any particular aspect of sport if the concept of sport itself is obscure. Some scholars go even further arguing that the construction of a theory of sport has as a preliminary step the definition of sport. According to this view, theorising about sport is only possible when this concept is properly defined. Perhaps the view of these academics can be brought out further by noting a negative form of the same argument. It seems to run as follows: If there is no concept of sport, then there is no theory of sport. If there is no theory of sport, then there is no science of sport. Consequently, if there is no concept of sport, there is no science of sport. This seems to be the reason why for the representatives of this position it is imperative, for the recognition of sport science as a science, to establish a certain degree of precision about the sort of things covered by the concept of sport.

The views presented up to this point set the grounds for the examination of the attempts to justify sport science aimed in this chapter. There are three issues to be taken into consideration: (a) to look at the different characterisations of science in an attempt to understand what distinguishes it from other human enterprises, in particular, what counts for a particular domain of inquiry to be considered scientific; (b) to examine whether a theory of sport plays any fundamental role in the justification of sport science; (c) to examine whether a definition of sport is a necessary condition for the construction of a theory of sport.

4.3 The Concept of Science

In this section we focus on the concept of science. In general terms, the problem under investigation may be formulated as follows: ‘When should an area of inquiry be ranked as scientific?’ The resolution of this question seems to be a preliminary step for the examination of some scholars’ aspirations to establish a science of sport. For how could we know whether their claims are true without having at least a general idea about the nature of science. It seems important to notice that in the context of this study this question received a limited treatment. This happens to be so because we focused only on those aspects of the problem that are related to our major concern, that is, the justification of sport science.

The demarcation between science and non-science has been one of the most debatable questions in philosophy. Since the early decades of this century, several scholars have investigated the matter. Although this problem has been the focus of great attention throughout this century, it is not new. Studies in the history of science show that the problem was posed by the success of the scientific discoveries occurred in the eighteenth century.¹ It is not our intention to survey all the relevant positions put forward since that time. Instead we would like to draw attention to some contributions that appeared more recently and that, in great extension, have shaped our current views about the matter. The most representative attempts to give a proper solution to this problem have been described as (a) inductivism, (b) falsificationism, (d) paradigms and (e) relativism. An examination of these views will help to understand what a science looks like and how it differs from other forms of understanding.

4.3.1 Inductivism

The first view examined here is commonly referred to as ‘inductivism’.² For inductivism, what makes science a peculiar enterprise is the fact that it is based on the principle of induction, that is to say that the use of the inductive method is the criterion of demarcation between science and non-science. According to some authors, to eliminate induction from science would be to deprive it of the power to decide the

truth or falsity of its theories.³ The main tenet of inductivism is that science starts with observations of particular cases and moves on from them to generalisations.

Chalmers (1992) formulates this principle as the following:

‘If a large number of *As* have been observed under a wide variety of conditions, and if all those observed *As* without exception possessed the property *B*, then all *As* have the property *B*.’⁴

The move from a finite number of singular observations to generalisations is legitimate provided that certain conditions are satisfied. These conditions include a large number of observations under a wide variety of conditions and that no accepted observation conflicts with the derived generalisation.

Scientific theories are then general assertions about the properties and behaviour of some particular aspect of the world derived from the facts of experience acquired by observation and experiment. Once we have these theories in hand it is possible for us to derive from them predictions and explanations for a wide range of situations.

According to this view, scientific knowledge is proven knowledge. It can give us certainty about an occurrence. This idea is strongly supported by the evidence and beliefs of everyday life. We may even say that this is the view of science that most scholars hold. However, as we see later in this chapter, inductivism has been criticised for several reasons, among them the idea that science leads to certainty. For this reason, before we move to other views of science it is necessary to look at a more sophisticated version of inductivism.

This form of inductivism states that inductive inferences never produce certainty. Instead, what they can tell us is that something has a high probability of happening. Science then does not represent true knowledge but knowledge that is probably true.

Therefore, according to inductivism, if a given theory wants to rank as scientific it has to be a product of the inductive method. This theory tells us about the certainty of an event or that it has a high degree of probability of occurring.

Let us now return to the main question addressed in this section: ‘When should an area of inquiry be ranked as scientific?’ From an inductivist point of view, the answer to this question would be the following: any corpus of knowledge composed of theories constructed according to the principle of induction should be ranked as scientific.

4.3.2 Falsificationism

The second view we want to look at is known as ‘falsificationism’. This account of science was posed by K.R. Popper for the first time in 1935. This author developed a distinctive explanation of the way science works. In this section we rely on two of Popper’s major studies on the subject *The Logic of Scientific Discovery* and *Conjectures and Refutations*.⁵ These studies may be seen as a criticism of inductivism and an attempt to develop a non-inductivist account of science. It seems adequate to begin with an examination of the arguments against inductivism and then move on to the main ideas of falsificationism.

The first criticism is directed at the idea that science proceeds by first collecting observations and then inferring laws and predictions by induction. According to Popper, we cannot simply observe without theoretical background. In this respect, observation is always theory dependent because it is made in the language of some theory. The observations will be as precise as the theoretical framework they employ. Therefore, the idea that we first collect observations is mistaken since clearly formulated theories are a prerequisite for precise observations.

This point may be illustrated in the following way. An experiment, let us say in biology, is not simply the observation of a phenomenon. It is the interpretation of that phenomenon through the conceptual framework of that area. In this respect, what makes it possible for us to formulate any statement about that particular situation is the theoretical apparatus previously at our disposal.

The second criticism concerns the principle of induction. According to Popper, inconsistencies arise in connection with this principle. This becomes clear when we attempt to justify induction. Assuming that the principle of induction is a universal

statement, then the valid way to establish its truth is by inductive inference, that is to say, from the observation of a wide range of particular cases in which it occurs. Therefore, to justify the principle of induction, we have to make use of inductive inferences. This leads us to a circular argument since to make such inferences we have to assume the very principle we want to justify. An alternative answer to the problem would be to assume an inductive principle of higher order. This would not solve the situation, since we would need to justify this principle in another of even higher order. Such procedure would take us to infinite regress.

The third criticism is directed at the idea that inductive inferences may produce certainty or a high degree of probability about the occurrence of events. According to that criticism, no number of observations of particular cases, however large they are and whatever variety of conditions they occur in, may logically entail a universal statement. For Popper, to accept this notion is to take the principle of induction for granted.

Popper presents a different view about the way science works. He argues that although observations cannot establish the truth of scientific generalisations, they can establish its falsity. For the author, science begins with a problem emerging from an existing theory or expectation. The next step is the elaboration of conjectures or tentative solutions to the problem. From them we deduce testable propositions about the way the things work and then attempt to refute them. He describes this process as deductive testing of theories.⁶

Popper understands conjectures as speculations or tentative answers created by scientists in an attempt to overcome problems that as we said above emerge from previous theories or expectations. They are produced with the aim of giving an account of the behaviour of some particular aspect of the world. In Popper's work the act of conceiving a new theory or conjecture always seems to contain a creative element. For this reason he argues that there is no such thing as logic of scientific discovery only logic of scientific testing. This leads him to establish a distinction between the context of discovery and justification of scientific theories.

For this author, refutations are attempts to overthrow conjectures by carefully testing

them against observation and experimentation. The conjecture that stands a number of tests may be accepted only provisionally. This is so because we cannot know in advance whether it will stand the next test.

There is one important condition that a theory must satisfy in order to be granted the status of being scientific. It must be falsifiable, that is, we have to be able to decide whether the theory is true or false by empirical tests. For this reason they must be presented in such a way with precision and clarity to allow their refutation.

A last point to mention is that in Popper's view sciences are systems of theories constructed in this way. More precisely, a science is a 'loose cluster of theories undergoing challenge, change and growth'.⁷ For this scholar, in summary, science progresses by conjectures and refutations. Scientific theories are well-tested conjectures that stand provisionally. The deductive testing of theories or falsificationism is the method of science.

Considering the main question addressed in this part of the study we may say that, from a falsificationist perspective, for an area of inquiry to rank as scientific it must be composed of one or more well-tested theories which are open to falsification.

4.3.3 Paradigms and Revolutions

In this section, we examine an account of science which is rather different from the ones in the previous parts. A common feature among the views examined earlier is that they distinguish science from non-science based on the idea that the former is characterised by a special methodology or set of rules.

The view we look at now attempts to give an account of science more in keeping with its historical development. It argues that what makes science a peculiar enterprise is the existence of a paradigm.⁸ According to this view, sciences progress from a pre-scientific period to normal science and then go on through episodes of crisis and scientific revolution until a new period of normal science is achieved. Scientific development follows this pattern successively.

These periods may be roughly described as follows. Pre-science is a disorganised and diverse activity that precedes the emergence of a science. It is a period characterised by the existence of a number of competing explanations concerning a given event or situation. No common body of belief can be taken for granted. Each individual is forced to build its field from the foundations.

Normal science begins when one or more past achievements give the basis for research and allow the formation of a particular scientific community. These achievements provide the foundation for further research. This period is cumulative in terms of knowledge. There are no significant changes in the way the community operates.

The notion of normal science is closely connected to the concept of paradigm. The latter is a key idea for the understanding of Kuhn's account.⁹ According to Kuhn, all periods of normal science are characterised by the existence of a paradigm. The author characterises them as achievements that share two basic features. They attract a permanent group of scientists away from competing modes of scientific activity and are sufficiently open-ended to leave problems to be investigated by them.¹⁰

It is difficult to give a precise definition of this term. In the Postscript to *The Structure of Scientific Revolutions* this scholar recognises two uses of the expression. The first one is more general and comprises among other things the following elements: laws and theoretical assumptions, standard ways of applying the laws and theories to various situations and instruments and techniques of investigation. In this study, we assumed this notion of paradigm since it seemed to be the most appropriate for the topic under examination.

A period of crisis occurs when an existing paradigm is not able to give adequate accounts and insights into the problems it is supposed to explore. It may be described as a non-cumulative period. What follows from such a situation is a moment where incompatible paradigms compete. Scientific revolutions take place when an older paradigm is replaced by an incompatible new paradigm. If this happens, then after a period of changes another period of normal science occurs. This time, however, the new paradigm will support the enquiry in that particular domain. This means that new theoretical assumptions, techniques and other relevant aspects of investigation

will be in use.

In regard to the question addressed in the beginning of this chapter, we may infer from Kuhn's account that the existence of a paradigm is a necessary condition for an area of inquiry to be considered as science.

4.3.4 Relativism

The last position about the nature of science examined in this section is usually named relativism.¹¹ For this conception there is no universal method in science. Feyerabend (1993) argues that if one wants a formulation of the manner in which science works, the best way to capture its essence is by the expression 'anything goes'.¹²

According to the author, none of the proposed methodologies of science provided rules that adequately describe the activities of the scientists. He argues that taking into consideration the history of science it is most implausible that this will happen.

An important concept in the relativist account is referred to as incommensurability. For Feyerabend, the interpretations of some particular aspect of the world made by scientists depend on the theoretical context in which they occur. In many situations it is not possible to compare one theory to another. This is so because they do not share the same assumptions.

This notion makes the distinction between science and non-science less important. The distinction varies according to the values and interests of the particular scientific communities. In fact, the author rejects the idea that a decisive criterion to distinguish science from other forms of knowledge can ever be achieved.

In criticising the traditional accounts of science the author arrives at the conclusion that what remains are aesthetic judgements, judgements of taste, metaphysical prejudices and religious desires. In other words what remains are subjective wishes.

4.3.5 The Concept of Science: Final Consideration

The views described above show that there is no agreement concerning the demarcation between science and non-science. In fact, there is a spectrum of positions varying from strict rules and methodologies as in the case of inductivism and falsificationism to the loose, not to say complete lack of limitations, as in the relativist account of science.

The examination of these ideas of science highlighted various important aspects to be taken into consideration when examining the scientific status of sport science. Let us look at some of the conclusions we can reach from the positions presented there.

The inductivist view of science showed not to be adequate. The criticism of Popper described earlier in this chapter seems to indicate that this account is a misrepresentation of the way science works. Therefore, we cannot justify a science of sport based on that position.

In respect to falsificationism, there are various kinds of criticism to Popper's ideas. A very important one seems to be that falsificationism is in conflict with the history of science. If the scientists had adopted the methodology proposed by this scholar most of the best scientific theories would never have been developed. There are also other types of critical remarks to his views, for example, that a theory can never be conclusively falsified. These positions seriously undermine Popper's account of science and place difficulties for accepting his views as a theoretical framework for the examination of the justification of sport science.

An important conclusion may be reached at this point. If the criticism raised by relativists about 'the' scientific method is correct, then the characterisation of science posed by inductivists and falsificationists alike turn out to be mistaken. This, consequently, allows us to discard as false those arguments for the justification of sport science based on that view of science.

The relativist position brings other sort of difficulties for the problem under investigation here. If we take into consideration this account of science we have no parameter to assess the status of the science of sport. This is so because when relativists argue

that standards are inherent to each practice they leave no room for evaluation based on external criteria. In this case, the decision about the scientific status of sport science has to be taken according to rules established within its domain.

Some scholars have attempted to undermine the relativist position stressing that many human practices also have methods and standards inherent to their practices. However, this does not make them sciences. We have to agree that there is some sense in this criticism. For this reason, without any intention of disregarding relativism as unfruitful, we have to look in a different direction. As stated before, what scholars in the field of sport want is to establish a science in the same sense that we talk about biology, sociology and history. Therefore, the relativist view of science does not represent a theoretical alternative for the investigation of the arguments to substantiate that claim.

The position that seems to be more suitable for the problem under investigation here is the one that argues that science is characterised by the existence of a paradigm. There is a main reason for that. In the historical account of Kuhn, sciences developed from a non-scientific to a paradigmatic stage. For, him a mature science is characterised by the existence of a paradigm. This view seems to afford an adequate criterion for the assessment of the stage of development of the so-called sport science.

There are, however, critical observations to be made about Kuhn's account of science. Lakatos (1992), for example, argues that in recognising the failure of justificationism and falsificationism this author seems to have returned to an irrationalist position.¹³ This is so because in Kuhn's view there is no rules guiding the changes from one paradigm to another.

In the absence of a definite or consensual definition of science we are now on the difficult situation of either giving up the justification of sport science or sticking on the notion of paradigm that, according the position presented above, offers some possibility to go on in the investigation of the problem. Let us assume then that Kuhn's account of science though not fully satisfactory is the best we can get from the characterisations of science examined in this section. In this case, if sport science satisfies the description of paradigm put forward by that author, it can be considered

a science.

It seems that we can connect here the three lines of argumentation mentioned earlier in this study: (a) the characterisation of science, (b) the idea that a theory of sport is a necessary condition for the sport science, (c) the view that a concept of sport is prerequisite for the construction of a theory of sport.

As we saw before, theories are among those typical elements of a paradigm. We also saw that for some scholars the development of a theory of sport is a necessary condition for a science of sport. In this respect, it seems that the natural way to go is to examine whether there is a theory of sport. If there is, or can be, a theory of sport then an important step has been taken in the establishment of a paradigm and, as consequence, in the justification of sport science. However, there is another aspect to be considered here. According to the third line of argumentation, the concept of sport is a preliminary step for a theory of sport. Therefore, the critical examination of this claim seems to have logical priority in the justification of sport science.

4.4 The Concept of Sport

In the section above, we looked at the concept of science. Let us now examine the concept of sport. The clarification of the concept of sport has received special attention by the philosophers of sport. The interest in this topic dates back a long time. Its roots can be traced back at least to the beginning of this century. H. Graves' essay entitled *A Philosophy of Sport*, is a landmark in the history of the problem.¹⁴ In this essay published in 1900 the author referred to the fact that few words in the English language have such variety of meanings as *sport*. In this study the author critically examined the different and sometimes divergent uses and meanings of the term sport and attempted to give the concept a more precise definition. Despite the early attempts of Graves to give an academic treatment to the subject, an examination of the literature showed that it was not until the last three decades that the topic became the focus of systematic investigation and critical debate among the academic community.

As mentioned earlier in this chapter, the current interest in the clarification of the concept of sport is connected to theoretical issues of considerable importance. It is also related to practical matters though these are not in the scope of this study. For the topic investigated here this concept assumes particular relevance since some scholars have argued that the definition of sport is a necessary condition for a theory of sport.

If we accept this line of reasoning, then the question of the nature of sport emerges naturally. In this respect, there would be no great difficulty to identify football, rugby and athletics among the things we call sport. However, when we move away from the more common uses of the concept, problems begin to appear. For example, are chess, motor racing, turf and hunting sports? The answer to this question depends on the way we define the concept of sport.

Considering the above situation, the problem of the clarification of sport could be formulated in the following manner: 'What are the necessary and sufficient conditions that something must satisfy to be considered as sport?' Putting the matter another way, we need to establish a criterion to distinguish the sport from other types of things or phenomena.

4.4.1 Methodological Considerations

In this part of the study, some terms are employed with specific meanings. Therefore, it seems important to give a brief description of them.

The intension of a concept consists of the property or properties that a thing must possess in order to belong to the class of things referred to by that concept. In other terms, 'intension' is the criteria of inclusion in the set. To illustrate this point let us take the following example. Consider that competition is a property of sport. According to this criterion, for a given thing to be considered as sport it must possess among its attributes competition.

The extension of a concept consists of the class of things to which that concept

refers to. Putting in other terms, the extension of sport consists of all those things possessing the properties attributed to this concept. Considering the example above, we may say that football is covered by the extension of the concept of sport since it possesses competition among its properties.¹⁵

It is important to mention that there is an inverse relation between the intension and extension of a concept. This type of relation can be described as follows: if there is an increasing intension (criteria of inclusion) of a concept, then there is a reduction in its extension (members of the class) and vice versa. Putting the matter another way, in the definition of a concept, the larger the number of characteristics necessary to belong to the class (intension) the smaller will be its members (extension).

This kind of relation requires a certain amount of attention when attempting to define sport. For this reason, a satisfactory definition of sport should fill two conditions: generality and specificity. The generality establishes that a definition should be wide enough to include all those things we want to consider sport. The specificity ensures that the definition must be restrictive enough to exclude all those things we do not want to consider sport.

4.4.2 Etymological and Historical Analysis

Olivová (1984) argues that the expression 'sport' derives from the Latin term *se deportare* which survived in the Romanic languages meaning entertainment, amusement and recreation.¹⁶ According to the author, the Spanish word *deportarse* and the French *déporter* or *se déporter* attested in the beginning of the 12th century are derivations of the Latin term.

In the English language, the expression *disport* appeared in the 14th century. There, the term assumed the short form *sport* meaning pastime and games. There is a register of the use of this expression dating back to 1440.¹⁷ In the eighteenth century, the term 'sport' was used to refer to athletic contests.

Elias (1993) presents several examples to substantiate the claim that the term 'sport'

is a British product that until recently did not exist in the vocabulary of other countries.¹⁸ This position finds support in the work of Sansone (1988). According to that author, the word 'sport' was borrowed from English by other languages due to the fact that they had no similar term in their native vocabularies.¹⁹ Decker (1990) argues in the same way. He states that there is no record of the use of this expression in Germany prior to 1828.²⁰ There is agreement among these scholars that the term 'sport' has assumed different meanings during the centuries.

The historical approach of Guttmann (1978) follows a different path.²¹ This scholar introduces a conceptual distinction between modern sport and that practised in previous historical periods. With this characterisation of sport, the author turned away from a general definition by locating the phenomenon historically. According to him, modern sport has the following features: rationalisation, quantification, bureaucratisation, secularism, specialisation, orientation toward record breaks and equality of opportunity to compete and in competition. This characterisation of sport gave grounds for the development of the author's theories about the emergence and functions of sport in modern society.

Bento (1990) and Meinberg (1991), though not developing historical approaches, assume a methodological attitude similar to the author mentioned above when they advance the notion of 'plural sport'.²² For them, contemporary sport diverges from the previous forms insofar as it assumes a variety of meanings and forms of expression. Its peculiar feature is to be plural. This methodological approach is certainly connected to the difficulties posed by a precise definition of the concept sport. However, this notion has the advantage of being operative. For instance, Gaya (1994) makes use of this conceptualisation to investigate the scientific production about sport in the Portuguese-speaking countries.²³

The above studies show that the term 'sport' passed through alterations during the centuries. They also draw attention to the fact that we have to redefine this concept every time we employ it to refer to different cultures and historical periods. This put serious barriers for a universal definition of sport.

4.4.3 Comparative Studies

In attempting to find a proper definition of sport, several authors make use of comparative approaches. The studies of Schmitz and Suits may be included in such a classification.

Schmitz (1972) argues that sport is primarily an extension of play from which it derives its central values.²⁴ The play element of sport is responsible for its full realisation. According to the author, there is no logical relationship between both rather an ontological connection. The suspension of the ordinary is the crucial element in the preservation of sport as a legitimate human practice. Therefore, this element is a necessary condition of sport.

Suits (1973) establishes a comparison between sport and game.²⁵ For him, the elements of sport are essentially but not totally the elements of games. The games comprise four features: (a) aims, (b) means of achieving these aims, (c) rules to guide these achievements and (d) lusory attitudes. For Suits, to play a game is to attempt to achieve a certain situation using only the means allowed by the rules. The latter prohibit the use of more efficient means in favour of the less efficient. The reason for accepting the rules is because they make that activity possible. To play a game is to create a situation of overcoming unnecessary obstacles. According to Suits, sport is a special type of game. It is a game of physical skill followed by a large group of people and with certain institutional stability.

McBride (1979) offers some elements for the criticism of the above definitions of sport.²⁶ According to him, neither the intension nor the extension of the concept of sport is concise. That is to say that its boundaries are not clearly defined. This poses difficulties for the determination of the members of the class. The author also claims that the attempts to limit concisely the concept of sport will either fail or end up as stipulative. For him, the concept has acquired a variety of meanings and usages. Some of them have no relation to each other. If McBride is correct, then there is no common property or set of properties among those things we name sport.

4.4.4 Analytic Approaches

An alternative way of dealing with the problem of the multiplicity and lack of precision of the concept of sport has been the notion of ‘family resemblances’. The notion of ‘family resemblances’ was introduced by Wittgenstein in his *Philosophical Investigations*. There he used it to examine the concept of game. Several scholars have focused on the problem of the definition of sport through this notion.²⁷

Applying the notion of ‘family resemblances’ to the examination of those activities usually named sport we may say that there is no characteristic or set of characteristics common to all of them. Instead there is, using the terms of that philosopher, ‘a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail’.²⁸

Fogelin (1972) illustrates this situation in the following sequence where *S* stands for sport and the properties of sport by A to H.²⁹

S_1	S_2	S_3	S_4	S_5
A	B	C	D	E
B	C	D	E	F
C	D	E	F	G
D	E	F	G	H

The notion of ‘family resemblances’ has not been accepted without criticism. If Wittgenstein is wrong in thinking that we cannot establish a definition of game, then his argument against definitions in general loses force. Consequently, this gives some hope for those scholars that search for a satisfactory definition of sport.

4.4.5 The Concept of Sport: Final Consideration

Considering the examination of the definitions of the concept of sport presented above we may say that the academics dealing with the matter are divided in two groups. The first group includes those scholars that believe that it is possible to establish a

definition of sport. Among them we found no agreement about the necessary and sufficient conditions that something must satisfy in order to be considered as sport. In the second group are those scholars that have argued that there is no property or set of properties common to all those things we call sport. Let us examine what are the consequences of these positions for the justification of a science of sport.

If we assume the view that a concept of sport is a necessary condition for a science of sport, then we shall say that the arguments put forward by the second group of scholars rules out the possibility to establish a science of sport. This is so because according to them it is not possible to define the concept of sport.

If we accept the view of the first group of scholars, we are in the following problematic situation. As there is no agreement about the necessary and sufficient conditions to be satisfied in order to rank as sport, then we either assume one of the proposed definitions and go ahead in the justification of sport science or we have to wait until some agreement is achieved among the academic community debating the matter. Therefore, the difficulty to establish a definite and complete definition of sport represents powerful limitations to solve the problem of the science of sport.

In fact, neither position seems to be adequate. In the case of academics assuming any given definition of sport, we are risking to have as many theories as concepts of sport. Each theory would be explaining a different phenomenon. This is in some extension what scholars want to avoid. In the case of postponing the justification of sport science until we achieve some degree of consensus about the definition of sport, we may be nurturing false expectations. We certainly hope that a satisfactory definition of sport will be achieved. But it is hard to know in advance when and how this will happen. There is, as a matter of fact, no way of guaranteeing that we will succeed in reaching such agreement someday in the near future.

However, there is an alternative way to deal with the problem that seems to avoid the problems mentioned above. There are some considerable reasons to believe that the approach as a whole is inadequate. These are based on the arguments presented by Popper (1991) and Chalmers (1992).³⁰ On the basis of their views the problem of clarification of concepts loses importance in the philosophical and scientific debates.

The main argument is that the content of any concept is given by or is close connected to the role it plays in a specific theory. Putting the matter another way, any relevant scientific concept achieves its full meaning in the context of a given theory. This point needs clarification.

Even though it is important at some point in the process of theory building to define the boundaries of some concepts, their contents do not always have and some times cannot be established in advance. Scientific concepts must to be understood as constitutive parts of a particular theory. The consequence of such position is that we change the focus of the discussion from concepts to theories. We would claim that, in general, the degree of precision of a concept is close related to the power of explanation of a given theory. In other terms, the best a theory is the more precise will be its constitutive concepts. This argument seems to indicate that the concept of sport is not a preliminary step for the development of a theory of sport.

4.5 Theory and Sport Science

In the last section we arrived at the conclusion that a concept of sport is not a prerequisite for a theory of sport. There are, however, some other reasons to believe that even if an agreement was achieved in relation to the concept of sport, the construction of a theory of sport would still be a difficult goal to be reached. This is so because apparently there is no such thing as a theory of sport. It seems that all theories about sport belong in one way or another to the domain of the established sciences.

These remarks take us in direction to the last step in the examination of the attempts to justify sport science. The question to be addressed here is whether there is such thing as a theory of sport.

We are aware of the difficulties to define what a scientific theory is. This became somewhat clear by the analysis of the concept of science carried out earlier in this study. Given the complexity posed by this notion, it seems that the best way to start is by establishing a rather simplistic definition of scientific theory.

Let us say that scientific theories are explanations about the properties and behaviour of some particular aspect of the world or the human experience that can be submitted to empirical test. If we agree with this definition the work of the scientist consists in putting forward and testing theories. What are then the theories and testing performing by sport scientists? Do they have any peculiar way of doing so? The answer is, most, if not all, the theories in the so-called 'sport science' belong to the domain of the traditional disciplines.

This is not to say that sciences do not borrow from each other. The point to be stressed here is that 'sport science' does not constitute a distinctive mode of inquiry. For one side, the justification of sport science requires the development of a new form of asking questions, answering and testing them. These would generate new explanations about the way things work. This has not been achieved. For other side, those scholars that reached some success, did so by reducing the scope of the area to a set of problems related to sports taxonomy, rules and tactics of sports and sport training.

The arguments above lead to the conclusion that at least in the senses described above there is no theory of sport. Therefore, the so-called 'sport science' fails to satisfy one of the basic condition of a mature science posed by the definition of paradigm.

4.6 Conclusion

In this chapter we attempted to show that there is at least one strong reason to believe that there is no such thing as sport science. The reason is that sport science does not fulfil one of the main conditions required by the definition of science. This condition establishes that to rank as a science an area of inquiry must possess some sort of theory or set of theories reasonably logical integrated. These enable the scientist to guide and test its assumptions against the world throughout careful experiments, observations and other procedures, and that this theory or sets of theories has shown some reliable results. If the results achieved in this chapter are correct, then the most we can aspire from the so-called 'sport science' is to be a meeting point of several

sciences. In this case, the expression 'sport sciences' is the one that best represents such a situation.

Notes

- ¹See D. Gillies (1993) *Philosophy of Science in the Twentieth Century: Four Central Themes*. Oxford: Blackwell.
- ²The account of inductivism presented in this section is based on A.F. Chalmers (1992) *What is This Thing Called Science?* 2nd ed., Milton Keynes: Open University Press; K.R. Popper (1992) *The Logic of Scientific Discovery*. London: Routledge.
- ³See K. Popper (1992), *op. cit.*, p. 28.
- ⁴A.F. Chalmers (1992), *op. cit.*, p. 5.
- ⁵See K.R. Popper (1992) *The Logic of Scientific Discovery*. London: Routledge; and K.R. Popper (1991) *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Routledge.
- ⁶See K.R. Popper (1992), *op. cit.*, p. 32.
- ⁷K.R. Popper (1991), *op. cit.*, p. 67.
- ⁸This part of the study is based to a large extent on T.S. Kuhn (1970) *The Structure of Scientific Revolutions*. 2 ed., Chicago: The University of Chicago Press.
- ⁹There is disagreement and criticism about the way Kuhn employed the notion of paradigm in his account of science. A critical examination of this concept is provided by M. Masterman (1974) 'The Nature of a Paradigm', in I. Lakatos and A. Musgrave (eds.) *Criticism and the Growth of Knowledge*. Cambridge: Cambridge University Press.
- ¹⁰*Ibid.*, p. 10
- ¹¹P. Feyerabend, P. (1993) *Against Method*. London: Verso.
- ¹²*Ibid.*, p. 296.
- ¹³I. Lakatos (1992) *The methodology of scientific research programmes*. Cambridge: Cambridge University Press. p. 9.
- ¹⁴H. Graves (1900) 'A philosophy of sport', *Contemporary Review*, 78 (December): 877-993.
- ¹⁵It is important to notice that we are not arguing that competition is a property of sport. We use competition as an example to illustrate the notions of intension and extension.
- ¹⁶V. Olivová (1984) *Sports and Games in the Ancient World*. London: Guild Publishing. p. 8-9.

- ¹⁷For the various uses of the term *sport* and other derivations see *The Oxford English Dictionary* (1989). 2 ed., Oxford: Clarendon Press. Volume 16. pp. 315-321.
- ¹⁸N. Elias and E. Dunning (1993) *Quest for Excitement: Sport and Leisure in the Civilising Process*. Oxford: Blackwell. pp. 126-127.
- ¹⁹D. Sansone (1988) *Greek Athletics and the Genesis of Sport*. Berkeley: University of California Press. pp. 1-2.
- ²⁰W. Decker (1992) *Sport and Games of Ancient Egypt*. New Haven and London: Yale University Press. p. 2.
- ²¹A. Guttmann (1978) *From Ritual to Record: The Nature of Modern Sports*. New York: Columbia University Press. p. 54.
- ²²J. Bento (1990) À Procura de Referências para uma Ética do Desporto (The Search for References to an Ethics of Sport). in J. Bento e A. Marques (eds.) *Desporto, Ética e Sociedade*. Porto: FCDEF, Universidade do Porto. pp. 23-39; E. Meinberg (1991) Ciência do Desporto: Balanço e Perspectiva (Sport Science: Balance and Perspective). in J. Bento e A. Marques. *As Ciências do Desporto e a Prática Desportiva*. Porto: FCDEF, Universidade do Porto. Volume 1. pp. 41-51.
- ²³A.C. Gaya (1994) *As Ciências do Desporto nos Países de Língua Portuguesa: Uma Abordagem Epistemológica*. (The Sciences of Sport in the Countries of Portuguese Language). Porto: FCDEF, Universidade do Porto.
- ²⁴K.L. Schmitz (1972) 'Sport and 'play: suspension of the ordinary'. in E. Gerber (ed.) *Sport and the Body: A Philosophical Symposium*. Philadelphia: Lea and Febiger.
- ²⁵B. Suits (1973) 'The elements of sport'. in R.G. Osterhoudt (ed.) *The Philosophy of Sport: A Collection of Original Essays*. Springfield: Charles Thomas. pp. 48-64.
- ²⁶F. McBride (1979) 'A critique of Mr. Suits' definition of game playing', *Journal of the Philosophy of Sport*, 6:59-65.
- ²⁷See L. Wittgenstein (1995) *Philosophical Investigations*. Oxford: Blackwell.
- ²⁸*Ibid.*, p.66.
- ²⁹R.J. Fogelin (1972) 'Sport: The Diversity of the Concept'. in E. Gerber (ed.) *Sport and the Body: A Philosophical Symposium*. Philadelphia, Lea and Febiger.
- ³⁰See K.R. Popper *Conjectures and refutations: the growth of scientific knowledge*. London: Routledge; and A.F. Chalmers (1992) *What is this thing called science*. 2nd ed., Milton Keynes: Open University Press.

Chapter 5

The Field of Human Movement Studies

5.1 Introduction

In this chapter we are concerned with the theoretical justification of a field of human movement studies. The question addressed through its sections is whether there is, or there can be, a field of human movement studies.

In the previous chapters we focused on the justification of an academic discipline of physical education and a science of sport. There, attention was mainly directed to the arguments of North American and German scholars. In this part of the study, we changed to Britain. In this country, the debate took a different path from those examined in prior chapters. Instead of attempting to justify an academic discipline of physical education or a science of sport, British physical educators developed an innovative way to deal with the problem. They forged the concept of 'field of human movement studies' based on the ideas of leading philosophers of education. The purpose of this chapter is to submit to a critical examination a selected number of arguments that support this view and discuss whether they represent a proper solution to the problem under investigation.

The chapter is divided in three sections. First section presents the historical evolution of the search for the academic identity of physical education in Britain. The second one deals with the concepts of 'forms of knowledge' and 'fields of knowledge'. The final section examines the arguments for the justification of a field of human movement studies based on the ideas developed on the previous sections.

5.2 The British Perspectives

In Britain, the concerns with the academic identity of physical education can be traced back at least to the middle of 1960s. Various studies published at that time mentioned that physical education was facing difficulties to establish itself as an academic discipline. According to some scholars, the links with education were the strength of physical education. However, some difficulties also emerged from such connection. The courses were mainly oriented to school teaching and only few people saw the area as a form of higher education.¹

In this respect, Start (1965) argued that physical education was among those subjects receiving more active opposition at university level.² For the author, the placement of the area in institutions of higher education led to the establishment of various types of departments. Some were created with the aim to organise student physical recreation while others though occupied with teacher training did not appear to be integrated in the academic life. At these departments the problem of the admittance to the scholarly community never arose. Following the views of this scholar, we could say that the need for the justification of an academic discipline of physical education seems to have appeared on those departments where studies in the area were accepted by the university as a work towards a degree. The University of Birmingham was then the only institution of higher education to offer graduate opportunities in the area.

The establishment of the degree of Bachelor in Education occurred in those years seems to have raised questions regarding the nature of the area at the university level. Some institutions began to discuss the possibility to establish courses considering

other professional carriers not related to school physical education. In 1964, Bambra portrayed physical education in the following way,

‘The present time appears, often, to offer the most exciting opportunities to the Physical Educationist, sometimes to offer almost overwhelming problems. We are faced by the need to reconsider and re-state and by the need to act quickly and decisively. It is a moment in which we must demonstrate convincingly that Physical Education is a subject that abundantly fulfils the aims of higher education.’³

At that time, manifestations in favour of human movement as the subject of study of physical education appeared in the work of some scholars. Bambra (1964), for example, mentioned that the staff at Chelsea College of Physical Education had spent a significant amount of time discussing with the aim to set out the content of a course in the study of movement. The course was named ‘Movement Studies’.

In 1965, Redfern developed some views about the matter in a paper entitled *Physical Education as an Academic Discipline*.⁴ It seems important to mention here that Redfern’s paper has the same title of F. Henry’s article presented in the 67th Annual Conference of the National College Physical Education Association for Men in 1964. This suggests some connection between the debates in both countries. As referred earlier in this study (see Chapter 2, section 2.2), the ideas of the North American scholar exerted influence on the debates about the academic identity of physical education in other countries. Even though Henry’s ideas may have played some importance in the development of Redfern views on this issue, the British scholar stresses that her concern is with the justification of an academic discipline of physical education in the way it is generally understood in Britain.⁵

Redfern describing the situation of the British universities in the 1960s, refers to the fact that they did not recognise mere acquisition of skill as adequate for an academic discipline. According to the author, if an area wants to rank as a discipline at university level, it must fulfil one or both of the following conditions. Either there must be ‘an integral body of knowledge peculiar to the subject’ or there must be

a 'number of artefacts on which to base a critical and appreciative study' as, for example, in the case of literature.⁶

According to the author, physical education does not fulfil such conditions. In respect to the first, the area lacks a core of specific knowledge. It relies mainly on the achievements of other disciplines and the scientific research undertaken by physical educators usually belongs to the domains of these disciplines. In relation to the second, physical education can only partially provide a basis for critical and appreciative study. This is so because the only way to fulfil that requirement is through that aspect of the area that deals with expression such as dance.

The author argues, however, that physical education could, and should, fulfil those conditions. The first step in this direction is to recognise that the term 'physical education' is not appropriate for an academic discipline. This expression gives the impression that the area deals merely with the education of the physical. Even though the attempts to interpret the field as education through movement increased its respectability, the term physical education is still meaningless since education is always through the senses. In addition, Redfern draws attention to the fact that the word 'education' implies studies related to professional needs rather than an area of knowledge that stands by itself.

According to the British scholar, it is the notion of 'human movement' that provides the fundamental basis for the development of an academic discipline. There is a long tradition of thinking this phenomenon as something more than just physical. This allows a more integrative approach putting in evidence processes which the roots are linked to the psychic dimension of human beings. For the author, physical education has done some work in this field. However, these concerns have focused on the purpose for which movement is used rather than the principles that underlie all movement.

If physical educators move in this direction, they would soon realise that a large scope of knowledge is available about human movement and that an enormous range of research possibilities is in existence. Therefore, for physical education to be recognised as part of the universities, it should present itself as the study of human movement.

A survey of the situation of physical education at the English universities was provided by Oliver (1967).⁷ The author presented a list with 14 institutions that had approved the inclusion of physical education as a possible discipline leading to Bachelor in Education.⁸ The author pointed out that this did not mean that the area would actually be included as a subject in the degree. This was so because the syllabuses could be rejected if the content was not considered adequate for the study at graduate level. An important aspect mentioned by this scholar is that in some universities 'movement' instead of 'physical education' was submitted for the appreciation of the senate as a subject on its own.

The study of Evans (1969) also focused on some aspects related to the establishment of the four-year course leading to the degree of Bachelor in Education and the consequences it had on the development of new possibilities for physical educators.⁹ For the author, human movement should be taken as a subject of study in the same way as other disciplines. The main reasons presented for such change was that the expression 'physical education' suggested an orientation towards school and led to a narrow interpretation of the area. According to that scholar, 'human movement' demarcates a much broader field of study.

There is another aspect worth to mention. In the author's view, the alterations in the orientation of the area would require a re-organisation of the colleges in terms of faculty basis. In the new structure students would chose units of study according to the career fields they want to follow. The author illustrates his views through some examples of courses' organisation. For the problem under investigation here the programme of human movement seems to be of the most importance. Evans proposal of a four-year course operates in the following way. The first year was composed of introductory courses. The student would attend lessons in human biology, health education, general and special method, curriculum courses, communications (the learning of a foreign language) and teaching practice. In the second year, we find studies in anatomy and physiology, anthropometry, measurement and evaluation as well as courses in psychology and sociology. Some studies started in the first year continued in the second. These consisted of curriculum courses, communication and teaching practice. The author also included a course named 'Principles' in which

the students would learn ‘the principles underlying the aims and objectives of their work and the planning and execution of teaching programmes.’ In years’ three and four, the studies were more specialised. The students would extend their theoretical and practical study. Other subjects were also included in this part as, for example, research methods, philosophy and recreational studies. The author stressed that a four-year course of this kind could provide sound practical experience and theoretical knowledge.¹⁰

In 1969, another important article was published by Carlisle.¹¹ We considered this paper of importance for two reasons. First, on the basis of his views it is possible to say that the development of Bachelor in Education degrees in physical education played some importance in his effort to define the relationship between different conceptualisations of physical education.

In that study, the author notes that ‘physical education’ is a technical concept. According to Carlisle, there are three discernible uses of this term in the educational discourse. The expression refers to (a) a range of educational activities taught to school children, (b) professional courses to prepare teachers, and (c) a field of study. For this scholar, tackling the problem of the characterisation of physical education in the first sense is a central issue since it is associated with the knowledge and expertise required to the preparation of teachers and the organisation of degree courses.

The second important aspect of Carlisle’s paper is that it comprises a justification of physical education as a worth educational activity. The author critically examines four theories of physical education with the aim to specify the nature of the activities encompassed under this concept at the school curriculum and justify their educational value. The author refers to these theories as: educational, movement, play and aesthetics accounts of physical education. This seems to be an answer to what the author considered a ‘perennial threat’ to the status of physical education as an educational activity. The same sort of preoccupation appears during the following years in the work of several British physical educators. It is connected with the definition of education as concerned with the development of forms of knowledge proposed by Hirst examined later in this study.

In the 1970s, several studies were published focusing on the concept of physical education, the demarcation of the scope of the area and its justification as a field of academic studies. The *British Journal of Physical Education*, the official scientific publication of the Physical Education Association of Great Britain and Northern Ireland, published during the year of 1970 articles dealing with these matters.

Webb (1970), for example, argued that physical education had always been associated with teacher preparation.¹² For the author, the connection to education limited the scope of the area. She stressed that the concept of physical education should be taken in a more broad sense. According to Webb, 'movement' should be acknowledge as the integrative factor. This notion allows the establishment of a common core of knowledge that may be studied independently of the ultimate profession someone wants to follow. It also opens the possibility for a variety of vocational areas.

A different approach was taken by Williams in a paper entitled *Art and Science of Movement*.¹³ In this study, the author stressed that physical education had differentiated into two academic fields: 'art movement' and 'science of movement'. For him, there were some common features connecting both areas of study. However, the divergence between them had increased to the point that opened the case for separate departments in colleges and other institutions of higher education. According to that scholar, while the later is concerned with education through movement for functional and recreative efficiency, the former takes the view that the education through movement is an art. In this respect, art movement attempts to define its identity and relations to other arts. Williams saw as a positive factor the separation of these areas into distinct departments. This helped towards the clarification of the boundaries between them. For him, there is also some advantage to make this distinction at the school teaching since the children would have a balanced access to both.

Morgan et al. (1970) developed a conceptualisation of physical education described as an educational activity concerned with bodily movement.¹⁴ The authors argued that the professional practice in this area was supported by a growing body of knowledge partly related to the study of human movement and partly emerged from the inquiry into the nature of the child. Their main concern was providing some justification for

the educational aspect of physical education. Even though 'movement' occupied a relevant place in their definition of physical education, the notion of physical activity was also included. The latter is considered in relation to the promotion of health and fitness and, in a more general way, to the intellectual, emotional and social development.

The concept of physical education put forward by this group of scholars was received with criticism by other physical educators. Jelfs (1970) suggested that their views about the matter lacked philosophical basis.¹⁵ In addition, they merely expressed a particular characterisation of the area. According to that author, an appropriate analysis of the concept of physical education relies on the examination of its meaning. Jelfs' observations anticipated the philosophical approach that since the early 1970s has become common in the debates about the justification of the area.

Another contribution came from Best (1978). According to this scholar, the distinction between the terms 'physical education' and 'human movement studies' is only terminological. He points out that do not seem to have any issue of conceptual importance involved here. It is a matter of convenience as far as the term employed express clearly what it refers. He suggests that physical education should be used to refer exclusively to those activities related to the school teaching. The expression 'human movement studies' would be used in a wider sense to refer to the area of study. It could include physical education activities. However, there is no necessary connection between the study of human movement and teaching situations.¹⁶

The studies mentioned up to this point are sufficient to show that human movement was presented by several scholars as the subject of inquiry of the area commonly referred to as physical education. Let us now move to a second aspect that deserves some attention in this historical introduction, that is, how the aspirations of British physical educators to establish human movement as an area of academic teaching and research connects with the notion of fields of knowledge to form a 'field of human movement studies'.

As stressed early in this study, the idea of a field of human movement studies was based on the views of leading British philosophers of education, in particular Paul

Hirst. The links between the work of Hirst and those of the scholars involved in the justification of a field of human movement studies are not difficult to establish.

On the basis of the bibliographical material taken into consideration in this study the earliest significant article arguing in favour of human movement as the focus for a field of knowledge appeared in 1971. There Hinks, Archbutt and Curl attempted to demonstrate that human movement could be characterised as a field of knowledge that relies on different forms of knowledge.¹⁷

Some years later, in the preface of *Human Movement a Field of Study* published in 1973, Whiting states that the book intended to be a source text for a new field of study in progress.¹⁸ In his opinion this field had been for historical reasons subsumed under the umbrella term physical education. It was arrived the time for the field of human movement studies to be recognised in its own right.

This book opens with an attempt to justify human movement as a field of studies. In that study, Curl (1973) relies heavily on the ideas of Hirst about forms of knowledge and field of knowledge.¹⁹

Another example to illustrate the influence of Hirst in the justification of a field of human movement studies is provided by the work of Renshaw. This scholar published some important papers during the 1970s about this matter. There, he also borrowed the notion of fields of knowledge to develop his ideas.²⁰

The significance of human movement as a focus of inquiry can be assessed by the increasing number of scholars studying different problems related to it. In 1975 a new scientific periodic dedicated to the matter was created in Britain. It received the title *Journal of Human Movement Studies* and intended to approach human movement from a multidisciplinary perspective. Its general editor was H.T.A Whiting and M.G. Whiting, members of the Department of Physical Education at the University of Leeds. The editorial board was composed of a group of British and international scholars from various scientific specialities. Among them were academics from zoology, psychology, physical education and neurology to mention some. It seems important to notice that this journal presented as a subtitle the following words: 'An

international journal concerned with the development of Human Movement as a field of study.'

We have given some idea about the concerns with the academic justification of physical education in Britain and the emergence of the idea of a field of human movement studies. We also attempted to show that the concepts of forms of knowledge and fields of knowledge are close connected to the matter. It seems that an important step for understanding of the problem under investigation here is to look at these notions. The next section is dedicated to them.

5.3 Forms of Knowledge and Fields of Knowledge

The concepts 'forms of knowledge' and 'fields of knowledge' play a key role in the arguments for the justification of a field of human movement studies. These notions were developed by Hirst when investigating the nature of education. It is necessary to examine these concepts in some detail to understand how they provided the basis for some scholars' attempts to justify a field of human movement studies in Britain.

The ideas of Hirst about forms of knowledge and fields of knowledge first appeared in a paper entitled *Liberal Education and the Nature of Knowledge* published in 1965.²¹ The author returned to the subject in later studies. For instance, in the *Knowledge and the Curriculum* this scholar elaborated and discussed more fully the points developed in the first work.²² In this part of the study we directed attention to the ideas presented in the paper published in 1965 since it was there that physical educators borrowed the ideas employed in the justification of a field of human movement studies. Hirst's further elaborations on this matter are examined later in this chapter. Let us start with the concept of forms of knowledge since this is logically prior to the concept of fields of knowledge. The latter is secondary and in some extension derivative of the former.

In that article, the notion of *forms of knowledge* emerged as a fundamental aspect in the author's theoretical effort to give to the concept of liberal education a more

positive content. There, he argued that the expression 'liberal education' had been taken in an entirely negative way. For him this was a misrepresentation of the term. According to Hirst, this expression was the appropriate name for a concept of education based on the nature of knowledge and, therefore, central to the discussion of education at any level. After examining the Greek notion of liberal education as a process concerned with the pursuit of knowledge and criticising some modern definitions of this concept, Hirst arrived at the conclusion that a consistent justification of this concept of education had to be worked out fully in terms of the forms of knowledge.

This scholar refers to the concept of forms of knowledge in the following way:

'By these (forms of knowledge) is meant, of course, not collections of information, but the complex ways of understanding experience which man has achieved, which are publicly specifiable and which are gained through learning.'²³

It is possible to say that in Hirst's view to have a mind is to come to have experience through several conceptual arrangements. For him, the mind is not something with its own forms of operation that naturally leads us to different kinds of knowledge. The forms of knowledge that are open for us today are results of a long process of development of the human kind obtained through learning. They have grown out in distinctive ways from our common knowledge of everyday world.

The author argues that in the developed forms of knowledge four distinguishing features can be seen: (a) each form is comprised of central concepts peculiar to that form. Hirst give as examples: acceleration in physics, number in mathematics and god in religion among others; (b) each form has a distinctive logical structure. The central and other concepts build a network of possible relationships that makes experience intelligible. The terms and statements of mechanics are presented as example here; (c) each form has distinctive expressions or statements that are testable against experience following some criteria particular to that form; (d) each form has particular techniques and skills developed for exploring experience and testing the statements.

The author draws attention to the fact that though these features afford the ground for a distinction among the various forms of knowledge, it cannot be assumed that they provide a means to distinguish all there is to them. According to this scholar, knowledge involves the use of symbols and the making of judgements in ways that can only be learnt in a tradition.²⁴

Taking into consideration these features, the author distinguishes seven forms of knowledge as: physical sciences, human sciences, mathematics, the arts, historical, moral and religious knowledge.²⁵ In a later study, the author presented a somewhat different characterisation of the forms of knowledge. There he described them in the following way: (a) formal logics and mathematics, (b) physical sciences, (c) awareness and understanding of our own and other minds, (d) moral judgement and awareness, (e) objective aesthetic experience, (f) religious understanding, and (g) philosophical understanding.²⁶

An essential aspect in Hirst's justification of liberal education is that forms of knowledge are self-justifying. They enjoy this status because they are the ways in which it is possible for someone to be rational. In other words, they constitute our rationality. To question this notion does not make sense since to do this requires commitment to very notion that is being questioned. For this scholar, it was reached the point where the question of justification ceased to be applicable.

It seems that the ideas presented up to this point provided, at least for the problem under investigation here, sufficient information for the understanding of Hirst's notion of forms of knowledge. Lets us move now to the notion of fields of knowledge.

Hirst argues that forms of knowledge are not the only possible classification to be recognised. There are other important organisations of knowledge that must be taken into consideration. He describes them in the following way: (a) those that are not themselves disciplines or subdivisions of any discipline which he named fields of knowledge; (b) moral knowledge, and (c) second order forms of knowledge.

The author defines fields of knowledge in these terms,

‘ (Fields of knowledge) are formed by building together round specific

objects, or phenomena, or practical pursuits, knowledge that is characteristically rooted elsewhere in more than one discipline (form of knowledge). (...) But these organisations are not concerned, as disciplines are, to validate any one logically distinct form of expression. They are not concerned with developing a particular structuring of experience. (...) They are held together simply by their subject matter, drawing on all forms of knowledge that can contribute to them.’²⁷

An important aspect to notice here is that forms of knowledge are self-justifying while fields of knowledge ask for some external justification. This poses the question of whether a field of knowledge focusing on human movement is justifiable. The answer to this question would require philosophical but also other sort of justification to ensure its place in the academic community. The relevance of a field of human movement studies is a debatable matter and, as mentioned in the beginning of this study, other sort of justification is beyond the scope of this study. Let us then focus on the issue from a philosophical perspective. The next section examines whether the notion of human movement provides a satisfactory focus for a field of knowledge.

5.4 The Concept of Human Movement

As we attempt to show in the previous sections, the notion of ‘human movement’ has been presented by many scholars as the appropriate focus for a field of studies. However, in most of the occasions there is no explanation about what is meant by this term. One of the major problems that emerge from this approach is to identify the sort of things or phenomenon that are comprised under such expression.

Mawdsley (1971) argued that human movement is among all those concepts related to physical education the one that has probably generated more discussion. According to him, this concept assumes several meanings and for this reason much work remains to be done in order to justify human movement as an alternative to physical education.

Other scholars argue in similar direction. According to Best (1976) a common problem encountered in those using this expression is that they take the term either on a very general or much restricted sense. This, he suggests, put great difficulties for the use of this term.²⁹

This seems to be the position of Parry (1985) when he claims that 'sport' rather than 'human movement' provides a more precise, identifiable and honest focus for a field of study. For him, the attempts to justify a field of knowledge based on such notion fail because of the use of the 'imprecise catch-all concept of human movement.'³⁰

On the basis of these claims we would like to argue here that human movement is a vague notion and, therefore, does not provide an adequate focus for a field of studies. The first point to stress is that taken in a general sense this concept can be extended to almost every dimension of the human experience.

It can refer to the movement of the body as a totality as when someone moves from one place in space to another. For instance, walking and swimming illustrate this notion of movement. The term can also refer to the movement of large parts of the human body as, for example, when someone moves the arm to drink a glass of water. We can employ the same notion to denote the movement of a smaller portion of the body, e.g., the movement of the eyebrow, nose and finger. There are other possible subdivisions of the human body to what the concept of movement could be applied. The movement of the cells and within the cells other microscopic elements in movement exist. We could repeat this procedure until we arrive at the atomic and subatomic levels that movement would still exist inside the human body. The point we want to make here is that we can apply the notion of human movement to almost every situation and, in doing so, this concept loses explanatory power.

One could argue that an alternative way to deal with the situation would be to stipulate some social or cultural forms of human movement as, for example, those involved in sporting activities and dance. Other alternative could be to select certain types of movement, e.g., walking and running. Another criterion that could be suggested is the level of magnitude of the movement as, for example, the macroscopic and microscopic or external and internal dimensions of the human movement.

In general, scholars have rejected such attempts to define the boundaries of the concept of human movement. This is considered to be a narrow characterisation of the field since it concentrates solely on particular aspects of the human movement.

In addition, if we look at the criteria presented above, that is, social and cultural forms of human movement and types of human movements we are not sure whether they actually get rid of the problem generated by the wide definition of movement. In both, movement can still be focused in various levels of magnitude leading, as we mentioned earlier, to a concept that has no scientific significance.

These arguments seem to show the vacuity of the concept of human movement. Consequently, this notion does not provide an adequate focus for a field of studies.

5.5 Conclusion

In this chapter we focused on the attempts to justify a field of human movement studies. We looked at the definitions of forms of knowledge and field of knowledge. We also discussed the notion of 'human movement'. As a conclusion we may say that there is not such thing as a field of human movement study. The main reason for the refutation of the arguments examined here is that the concept 'human movement' is vague and therefore does not represent an adequate focus for a field of studies.

Notes

- ¹See A.J. Bamba (1964) 'An address on the future of physical education', *Bulletin of Physical Education*, Special Supplement, 5:41-52.
- ²See K.B. Start (1965) 'Physical education as a university discipline', *Bulletin of Physical Education*, 6(7):4-17.
- ³A.J. Bamba (1964), *op. cit.*, p. 41.
- ⁴See B. Redfern (1965) 'Physical education as an academic discipline', *The New Era in Education*, 46(2):37-40.
- ⁵*Ibid.*, p. 37.
- ⁶*Ibid.*, p. 37.
- ⁷J.N. Oliver (1967) 'Physical education in the B.Ed. degree: a beginning', *Bulletin of Physical Education*, 7(1):4-14.
- ⁸The following universities are included in the list: Birmingham, Bristol, Exeter, Keele, Leeds, Leicester, Liverpool, London, Newcastle, Nottingham, Southampton, Sussex, Warwick and Manchester. The universities of Cambridge, Durham, Hull, Oxford, Reading, Sheffield and Wales were among the institutions that did not approve physical education as a discipline for Bachelor in Education. For more on this matter, see J.N. Oliver (1967), *op. cit.*, p. 6.
- ⁹J.C. Evans (1969) 'The physical education teacher: his training and future prospects', *Bulletin of Physical Education*, 7(8):37-48.
- ¹⁰*Ibid.*, pp. 44-45.
- ¹¹R. Carlisle (1969) 'The concept of physical education', *Proceedings of the Philosophy of Education Society of Great Britain*, 3:5-22.
- ¹²I.M. Webb (1970) 'Nomenclature, taxonomy or what's in a name', *British Journal of Physical Education*, 1(1):3-5.
- ¹³L.C. Williams (1970) 'Art and science of movement', *British Journal of Physical Education*, 1(3):58-63.
- ¹⁴R.E. Morgan, I.K. Glaister, M. Dunn, J.C. Evans, M.R. Follows, R.H. Scott, H. Stuttard, H.T.A. Whiting, J. Williams, J.W. Armstrong, L.B. Hendry, M. Horsley and D. Robinson (1970) 'The concept of physical education', *British Journal of Physical Education*, 1(4):81-82.

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- ¹⁶D. Best (1978) 'Degree studies in human movement and physical education', *Journal of Human Movement Studies*, 4:119-128.
- ¹⁷E.M. Hinks, S.E. Archbutt and G.F. Curl (1971) 'Movement studies: a new standing committee', *University of London Institute of Education Bulletin*, 23, 4-10.
- ¹⁸J.D. Brooke and H.T.A. Whiting (1973) *Human Movement: a Field of Study*. London: Henry Kriptom.
- ¹⁹G.F. Curl, (1973) 'An attempt to justify human movement as a field of study'. in J.D. Brooke and H.T.A. Whiting (eds.) *Human Movement: a Field of Study*. London: Henry Kriptom.
- ²⁰P. Renshaw (1973) 'The nature of human movement studies and its relationship with physical education', *Quest*, 20:79-86 and P. Renshaw, P. (1975) 'The nature and study of human movement: a philosophical Examination', *Journal of Human Movement Studies*, 1(1):5-11.
- ²¹P. Hirst (1965) 'Liberal education and the nature of knowledge'. in R.D. Archambault (ed.) *Philosophical Analysis and Education*. London: Routledge and Kegan Paul.
- ²²P. Hirst (1974) *Knowledge and the Curriculum: A Collection of Philosophical Papers*. London: Routledge and Kegan Paul.
- ²³P. Hirst (1965), *op. cit.*, p. 38.
- ²⁴*Ibid.*, p. 45.
- ²⁵*Ibid.*, p. 45.
- ²⁶P. Hirst and R. Peters (1970) *The Logic of Education*. London: Routledge and Kegan Paul. p. 63-64.
- ²⁷P. Hirst (1965), *op. cit.*, pp. 45-46.
- ²⁸ H.P. Mawdsley, H.P. (1971) 'A conceptual analysis of human movement', *Bulletin of Physical Education*, 8(5):39-45.
- ²⁹D. Best (1976) 'The slipperiness of movement', *Journal of Human Movement Studies*, 2:182-190.
- ³⁰J. Parry (1985) 'Philosophy and sport science', 203-220.

Chapter 6

Conclusion

6.1 Introduction

In the previous chapters, we have looked at various aspects of the problem of the academic identity of physical education. These chapters were organised in such a way as to examine individual topics. This allowed each part of the study to stand independent of the rest. In this, our final chapter, we will try to achieve a more unified understanding of the matter, taking into account everything we said, making sense of the individual findings and presenting an overall conclusion of the thesis.

In order to do that we organised the chapter in five sections. First, we present a summary of the overall final position drawing upon the previous chapters. Next, we make a comparison of the position we arrived at with others in the current literature. In section three, we reflect on the merits and weakness of the approach we adopted within the thesis. Then, we describe our current position on the matter. Finally, we consider the professional implications of the study.

6.2 Overall Final Position

In this study we attempted to reconstruct the debate about the academic identity of physical education in various countries. We tried to identify key ideas and arguments of a number of scholars who attempted to justify physical education as an autonomous branch of knowledge. We concentrated on the views that showed the best representatives of these attempts. The positions in question were: (a) academic discipline of physical education, (b) sport science, and (c) field of human movement studies. We then critically examined these positions with the purpose to verify whether they represent a proper solution to the problem of the academic identity of physical education. Along the way, we presented arguments and suggestions about how we might reject these views as mistaken. We have now arrived at the point to address the question ‘What is the overall final position that we draw from this study?’ In answering this question, we look first at the socio-cultural and historical dimensions of the investigation and second to the philosophical ones.

It is our contention that the concern with the academic identity of physical education, as expressed by contemporary scholars and professionals in periodicals, books and proceedings of academic meetings, is deeply rooted in the past of physical education. The analysis of the historical development of physical education showed that the concerns with its academic identity can be traced back at least to the first decades of last century when the area began to establish itself as a profession and the first efforts to give scientific treatment to the field took effect. The initiators of physical education first in Europe and later in North America expressed this preoccupation in various opportunities.

It is also our contention that the academic identity of the area has been since then a matter of recurrent concern among physical educators in both sides of the Atlantic. The investigation demonstrated that scholars discussed the issue in several occasions during the second half of nineteenth century. There is also plenty evidence to substantiate the claim that the debate about the academic identity of the area occurred during the entire twentieth century.

Another important point in our argument is that, in the early 1960s, the writings of academics in the former East Germany and United States established a fine demarcation line between a period of quasi-isolated concerns and a period of systematic attempts to give scholarly identity to the area. It was under their influence that the search for the academic identity of physical education spread to other countries.

It is not our contention, however, that such concern and the reasons for it have been unchanging through time and space. We argue in the opposite direction. Since the very beginning the debates took various forms and even though the views developed in Germany and North America in the 1960s gave the tune for the debates world-wide, other positions emerged in French-speaking countries and Britain. In fact, there were important variations that can only be understood with reference to local traditions, specific political conditions and economical and professional interests. The early concerns, for instance, were primarily connected to the aspirations of some individuals or small groups to give scientific basis to the profession. At that stage, this was the main reason for the efforts to give to physical education an academic status.

We found a rather different situation when in the early 1960s the matter assumed considerable importance on the agenda of scholars. In the United States, the attempts to justify the area as an academic discipline can be explained in terms of a corporative reaction. Professional and academic organisations made great efforts to avoid the exclusion of the physical education degree programs from the American universities. Professional interests, though cannot be considered the only cause, was certainly among the main reasons for the attempts to establish a field of human movement study. This idea enjoyed great popularity among British physical educators in the 1970s.

In other countries, political conditions were important factors at work in shaping the debates. In the case of the former East Germany, the attempt to demarcate the scope of sport science was close connected to the strategic position set to sport in the communist ideology. In Brazil, the concerns with the identity of physical education that emerged in the early 1980s were motivated in great extension by the discontentment with the model of physical education implemented by the government in a moment

of political distress. In that context, a number of leftist physical educators tried to brake with the official orientation and give a new direction to the area.

There are also connections and relationships among the views developed in different countries and regions. The way the problem has been discussed in France, for example, have influenced scholars in Spain and Portugal. In these countries, however, academics have adapted them to their own theoretical perspectives. Another example refers to the attempts to justify physical education as a cross-disciplinary field of study. This idea that was originally connected to the debates in North America is still exerted influence on important scholars in the Low Countries.

These points summarised the most important conclusions that can be draw from the socio-cultural and historical analysis. Let us look now at the ones that can be reached from the philosophical examination.

The overall final position we draw from the analysis of the arguments taken into consideration in this study is that, at least in the sense here described, there are no such things as the academic discipline of physical education, sport science and field of human movement. It is our contention that when submitted to a critical scrutiny none of these notions produced a satisfactory solution to the problem of the academic identity of physical education. We arrived at this conclusion because of the following reasons.

Assuming that the relevant sense one can talk about an academic discipline is when it refers to a logical integrated system of scientific theories, then the attempts to solve the problem through this notion showed unsatisfactory. As demonstrated in Chapter 3, the investigation of any aspect of physical education employs the theoretical and methodological framework of the already established disciplines (e.g. sociology, physiology, psychology and biomechanics). If this is true, than the logical integration of rather different theories and methodologies coming from disciplines so diverse as physics and history seems not to be achievable.

The arguments for the justification of a science of sport showed the same sort of difficulty. The points to be stressed here is that 'sport science' neither constitutes a

distinctive mode of asking questions, testing and answering them, nor is composed of an integrated system of scientific theories related to sport. As we mentioned above, the attempts to integrate into a logical system the rather different theories and procedures used by the so-called sport scientists proved to be failures. Therefore, the arguments in favour of sport science examined in this study did not fulfil the requirements posed by a definition of science.

If we assume that fields of studies are formed by building together knowledge that is rooted elsewhere in more than one discipline or science, than the arguments in favour of a field of human movement study yielded results that are more productive. In this respect, any well-defined object, phenomenal or practical pursuit can provide a focus for a field of study. At this point, however, the difficulties arise. The analysis of the concept of human movement showed that its limits cannot be well demarcated. The major problem is to identify the sort of things or phenomena that are comprised under such a definition. This makes it problematic as the focus for a field of study.

6.3 Comparing to Other Positions in Current Literature

In terms of the historical and socio-cultural aspects our position is similar to others in the literature in many respects. Some studies support our claim that the concerns with the academic identity of the area have a long tradition among physical educators in both sides of the Atlantic. Park (1981) in North America found evidence that these concerns can be traced back at least to the nineteenth century.¹ Renson (1998) and Parlebás (1987) have made similar findings in France.² Other studies have shown that the identity of the area has been a matter of recurrent concern among physical educators. In this respect, the works of Park (1981, 1989, and 1990) and Kroll (1982) provide support to our results.³ There are also similarities between our findings and others regarding the period in which the problem of the academic of physical education became an important issue on the agenda of scholars. Brooks (1981), Renson (1989), Willimczik (1992) pointed out the early 1960s as the demarcation line from a

period of non-systematic to systematic attempts to solve the problem ⁴

In relation to the philosophical aspects of the investigation, our position differs considerably from others in current literature. Most of the studies claim that there is in fact an academic discipline of physical education. Regarding this matter our study refuted the views that academic discipline could be organised in terms of subject-matters, realm of things, phenomenological classes and special terminology. Cheffers and Eval (1978), for instance, argue for subject-matters.⁵ Ojeme (1990) takes the view of phenomenal classes.⁶ Our position also disagrees with Henry (1964, 1978) and Renson (1989). They attempt to justify physical education as a cross-disciplinary field of study.⁷ We could not see how this notion differs significantly from interdisciplinarity. For Renson, the main difference is that interdisciplinarity takes only to a partial integration. As we mentioned in Chapter 3, this seems to suggest that cross-disciplinarity could lead to a complete integration. If this is the case, then we return to the traditional disciplinarity approach.

Considering the examination of the arguments for the justification of sport science, our position conflicts with the expectation of several German scholars.⁸ It was hoped that after undergoing a period of addition the disciplines that constitute the area of physical education would achieve a state of integration. However, based on the arguments presented in this thesis it is possible to say that this trend is not occurring. In fact, it seems that the growing scientific interest in this area is taking it into the opposite direction. There is an increasing specialisation and a restricted dialogue among the disciplines that focus in this field. What we see are specialised disciplines with few and some times nothing more in common than the focus on sport, exercise and outdoor activities. Consequently, the knowledge related to the area is getting more fragmented. In addition, there is no vestige of the so intensely expected unified theory that according to some scholars would give identity to the area.

Regarding the views for a field of human movement study, our position is supported by the work of some scholars. Mawdsley (1971) and Best (1976) have argued that human movement is among those concepts that generates more discussion. According to them, this concept assumes several meanings.⁹ Parry (1985) takes the same path.

For him, the attempts to justify a field of knowledge employing such expression fail because the imprecision of the term.¹⁰ Other scholars, however, have sustained that human movement is the adequate focus for a field of study.¹¹

6.4 The Merits and Weakness of the Approach

There are three main aspects to highlight in relation to the merits of this investigation. The first one was the decision to look at the problem of the academic identity of physical education through the lenses of different academic specialities. Fundamental to our decision to adopt such procedure was the belief that the present-day search for the academic identity of physical education could not be adequately understood without reference to the socio-cultural and historical context in which it emerged and developed. It was also fundamental to our decision the conviction that some aspects of the problem could not be answered by empirical methods. Therefore, the sociological and historical approaches though necessary would not suffice. The examination of the arguments for the justification of physical education as an academic discipline, for example, would require a different procedure. In order to investigate this type of question a philosophical approach was required.

This attitude might seem at first glance ambitious. However, as we mentioned in the introductory chapter, our intention was not to construct an all-inclusive explanation of the topic under consideration. Nor was our intention to effect a synthesis of different approaches. What we have tried to do was to break down some of the barriers posed by the traditional ways of looking at the issue. These focus either on the historical and sociological aspects of the problem or on the philosophical ones. The review of the literature showed that this division was particularly problematic for the topic under investigation in this thesis. Neither the socio-historical nor the philosophical approaches alone were able to provide an appropriate way to look at the problem. In fact, this segmentation seems to obfuscate essential features of the matter instead of to elucidate them. In this respect, we have tried a different departure bringing together different approaches in order to understand the problem of the academic

identity of physical education.

A second merit refers to the amplitude of the study. In general, scholars have focused on the debates that occurred in particular countries and regions. Few studies go beyond these limits. When they do, they tend to stay within the boundaries of North America, Britain and some Central European countries. In this respect, we attempted to broad the limits of these studies investigating how the debates occurred in other European countries and in Latin America, as in the case of Brazil. Moreover, we could not find in the literature any study that tried to trace the influences that views developed on one country or region might have had on another. We believe that the way we approached the problem allowed establishing some connections and relationships.

Another merit to point out is that the research brings together studies that are scattered in proceedings of national and international conferences, scientific periodic and books published in various countries. This, we believe, represents a fine starting-point for those attempting to investigate this problem further. The study also makes available to an English-speaking person a review of the main ideas developed by scholars in other languages, especially those published in Portuguese and Spanish.

The main limitation of this study is that in showing the inadequacies of the attempts to integrate into a coherent framework the body of knowledge of physical education and not offering a replacement to them, the problem of the academic identity of the area was left without solution. If such a situation is to be avoided, then an alternative answer to the increasing fragmentation of the knowledge in the area has to be offered. In the next section, we present some indications on how this can be done.

6.5 The Current Position

We began this study with the clear purpose of trying to find an adequate solution to the problem of the academic identity of physical education. It was our understanding that the deficiencies of the traditional views on the matter could be improved.

We shared with most physical educators the idea that a more integrated theoretical framework was necessary in order to give an identity to the area. As we mentioned previously, the knowledge required for the professional and academic activities embraced by the area is fragmented in various scientific disciplines and taught at different faculties and departments at the institution of higher education. In this context, to find a solution for such a situation was a sort of professional and academic imposition.

Considering that the examination of the attempts to integrate the area employing the notions of academic discipline, sport science and field of human movement studies showed unsatisfactory, we arrived at the conclusion that physical education is not, and could not, be an autonomous branch of knowledge in the same sense we say that biology, sociology and physics are. Once we have arrived at this conclusion we ask to ourselves the following question: ‘Have we achieved any progress in relation to the problem of the academic identity of physical education?’

We answer this question firstly referring to the philosophical approach we adopted within the thesis. It is our contention that philosophical analysis is concerned with arguments and justification, with reasons for accepting or rejecting a philosophical position. In these terms, our task in this study was to submit views and arguments to a critical examination and, if we could not completely solve the problem, at least we expected to arrive at a well thought-out answer. It is clear for us that we have not solved the problem of the academic identity of physical education. However, there is no doubt that some progress has been achieved.

An important reason to substantiate this claim is the following. The professional and academic community of physical education, as any social group, tends to accept without question a number of beliefs. The idea that physical education is, or could be, an autonomous branch of knowledge is one of these beliefs. It is our understanding that the study provided a contribution to the area showing that there are no good reasons to hold such belief. In these terms, if one accepts the conclusions of this study, than she/he must either try to give more consistency to the views here examined or search for a new framework of belief.

In this respect we suggest the second alternative. There are other ways to look at the

problem that seem to be more productive. Our proposal is moving from theoretical to practical matters. In our understanding physical education is a practical discipline. This affirmation is supported by the studies of some scholars that made a distinction between theoretical and practical disciplines.¹² The theoretical disciplines are those in which the primary purpose is the pursuit of knowledge without any consideration to practical matters. These disciplines organise their findings in systems of theories, e.g., physics, chemistry and sociology.

The practical disciplines are those which the primary purpose is on the pursuit of knowledge oriented to practical matters. They involve the acquisition of skills and mastering of techniques to perform some particular task. Their main concern is with instruction in practical knowledge. These disciplines tend to rely on findings of the theoretical disciplines and use them with applied purposes. For instance, engineering, medicine and arts belong to this type of discipline. They involve several activities such as building instruments and machines, making surgeries and teeth's treatment, play musical instruments and teach literacy. In these cases, the knowledge about how to perform is important for a good performance. It seems perfectly possible to have academic disciplines concerned with developing new knowledge for the best performance of a specific skill. There are in fact ways to perform some tasks better than others.

Following this line of reasoning we could argue that physical education is a practical discipline. It is concerned with the acquisition of knowledge with practical purposes. It also comprises skills and techniques to perform particular tasks, for instance, the knowledge about the best way to teach some skill in sports and how to measure the oxygen debt. In this terms, we could try to justify physical education as a practical discipline. In this approach there is no need for the area to rely upon an autonomous branch of knowledge. This provides a good starting-point for looking at the problem of the academic identity of physical education from a different perspective.

6.6 Professional Implications

This part is devoted to professional implications of the study. We notice that the examination of the professional implications was not among the objectives of this study, though we recognise that the arguments presented here might have effects on them. This would not be completely undesirable since we realise that the problem of the academic identity of physical education is connected with important matters such as the organisation of physical education in the school curriculum and the demarcation of the professional field. There is, however, one implication that we want to highlight here, it refers to the organisation of professional and academic training courses.

Concerning this matter, the study showed that a more disciplined approach to the problem of physical education is desirable. This area can only be effective if it draws on the disciplines that investigate various theoretical and practical problems emerged from its practice. A more integrated and systematic inquiry based on several disciplines would be of great benefit not only for physical education but to the disciplines that deal with its problems. This would enable someone entering the field to find a more organised structure of knowledge with some generally accepted problem situations, procedures and set of theories to base and guide the professional practice. The professional and academic programs would certainly receive a great improvement if they were organised in such way.

In conclusion, we hope that this study is of value in itself, though we would appreciate any contribution it could make to the understanding and amelioration of the professional practice of physical education.

Notes

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¹¹J.D Brooke and H.T.A. Whiting (1973) *Human Movement: a Field of Study*. London: Henry Kriptom.

¹²See D. Carr (1978) 'Practical pursuits and the curriculum', *Journal of Philosophy of Education*, 13:69-80; and D. Carr (1978) 'Practical reasoning and knowing how', *Journal of Human Movement Studies*, 4:3-20.

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