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# From Physical Education to Kinanthropology: A Quest for Academic and Professional Identity

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This paper traces the origins of the current dissatisfaction with the term physical education. A retrospective–comparative overview is given of the major conceptual trends and structural developments that have arisen since the academic status of physical education has been questioned. This quest starts in the United States in 1964, then moves to the Francophone sphere, on to Germany and Great Britain, and ends in the Low Countries. Four major conceptual trends are identified which are disciplinary, multi- or interdisciplinary or cross-disciplinary in nature. In an attempt to integrate these divergent approaches, the concept of kinanthropology is presented as an epistemological claim and a common denominator for both the science and the professional applications concerned with humans in movement.

Physical education is no longer considered an appropriate term for defining the study of humans in movement. As a clear symptom of the present dissatisfaction with the term physical education, the 25th anniversary conference of AIESEP (The International Association of Higher Schools of Physical Education) was entitled *Human kinetics—Mouvement humain* (Lisbon, December 2-5, 1987). The double subtitle *New professional directions* and *Fundamental studies* clearly reflects the fact that the search for a new professional and scientific identity has become an international endeavor.

In this paper I attempt to trace and interpret the origins of the dissatisfaction with the term physical education. I offer a retrospective–comparative overview of the major conceptual trends and structural developments that have arisen since the academic status of physical education has been questioned. Up to the present, however, most scholars who have attempted to construct an epistemological framework have shown a tendency to dwell within national or linguistic boundaries. Just like the name of this journal, this comparative study can be seen as a *quest*, in the medieval sense of an adventurous journey through international literature. The search starts in the United States in 1964, from where it moves

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to Francophone Canada and the Francophone sphere, then to Germany and Great Britain, ending up in the Low Countries.

The first international summary of the conceptual problem was made in 1974 during an international seminar on Concepts of Physical Education and Sport Sciences (Simri, 1974). In the same year Claude Bouchard (1974) published an extensive overview of the topic. This contribution, therefore, concentrates primarily on the very beginnings of the debate and on developments that have occurred since 1974.

Subsequently, a more prospective approach is taken. I present a two-dimensional taxonomy to illustrate the concept of kinanthropology. The kinanthropology paradigm attempts to integrate fragmented approaches and offers an epistemological framework and common denominator for both scientific and professional applications focusing on humans in movement in the context of sport, play, dance, physical exercise, work, or rehabilitation.

## Physical Education in the U.S.: Discipline or Profession?

Although the roots of discussion on the terminology and the academic status of physical education in the U.S. can be traced in the 19th century (Park, 1981; Rose, 1986), the debate was not opened until the 1960's. Franklin Henry's address at the 1964 meeting of the National College Physical Education Association for Men (NCPEAM), "Physical education: An academic discipline," (published in *JOHPER*, September, 1964 and further explicated in *Quest* in 1978), is generally accepted as having caused the "great debate" in North America. Henry's concern was "defining, at least in a general way, the field of knowledge that constitutes the academic discipline of physical education in the college degree program." He made the following statement, which is often quoted and discussed:

> An academic discipline is an organized body of knowledge collectively embraced in a formal course of learning. The acquisition of such knowledge is assumed to be an adequate and worthy objective as such, without any demonstration or requirement of practical application. The content is theoretical and scholarly as distinguished from technical and professional. (Henry, 1978, p. 13)

Stressing the need for integration, Henry pointed out that this academic discipline cannot be synthesized by a curriculum composed of carefully selected courses from other departments; nor does it consist of the *application* of the disciplines of anthropology, physiology, psychology, and the like to the study of physical activity. He stressed the cross-disciplinary nature of this field of knowledge and concluded as follows:

> Furthermore, the purely motor aspects of human behavior need far more attention than they currently receive in the traditional fields of anthropology and psychology. If the academic discipline of physical education did not already exist, there would be a need for it to be invented. (Henry, 1964)

Henry's paper has given rise to many controversies and to confusion about the specialization–fragmentation issue in the academic discipline. Some even con-

sider the paper in itself to be the contributing source of division and disunity between the academic discipline and the profession (Bressan, 1979; Harris, 1981).

The journal *Quest* was published for the first time in the year of Henry's address (1964). Since then, it has become an arena for discussion and also an official "wailing wall" for the academic versus professional status debate. A selection of articles that have appeared in *Quest* or elsewhere provides an expressive testimony of the continuing controversy (Table 1).

The titles in Table 1 clearly reflect two major problems: (a) a professional as opposed to a disciplinary orientation; and (b) the proliferation of new (sub)disciplines without any mutual cohesiveness. On one hand, there are voices which accuse the disciplinarians of losing touch with the profession. According to Locke (1977), pedagogy should be the main concern and teacher preparation should be the role of physical education. On the other hand, several new subdisciplines emerged as scholars focused on particular aspects. Biomechanics, exercise physiology, motor learning, sport psychology, sport sociology, history of sport and physical education, sport philosophy, and so on gradually became recognized and institutionalized as distinct entities (Rarick, 1967).

Although scholars like Henry (1964, 1978), Rarick (1967), and Brooks (1981) have all claimed that human movement is a legitimate field of research, that it should be cross-disciplinary, and that no other discipline explores it, they have failed to prove their thesis by providing a proper terminology and taxonomy in order to create an integrated body of knowledge.[1] Ross (1974, 1978, 1981) argued that the absence of such a paradigm or a central unifying theory has led to the situation that physical education cannot be labeled as a discipline but rather "a cooperative amalgamation or association of subdisciplines" (Ross, 1978, p. 11). Zeigler (1983, 1985) chose another tactic; he proposed to identify the so-called "eight areas of scholarly study and research" of sport and physical education with terms that are not currently part of the names of other recognized disciplines. For instance, instead of sociology of sport or psychology of sport, one should speak of "sociocultural and behavioral aspects." This proposal was con-

**Table 1**

**Some Writings on the Wall**

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|---|
| "Is the term physical education obsolete?" (Sage, 1969) |
| "Whither thou goest, physical education?" (Wrenn & Love, 1973) |
| "2001: The profession is dead—Was it murder or suicide?" (Bressan, 1979) |
| "Physical education: A house divided" (Harris, 1981) |
| "Has the name, physical education, outlived its usefulness?" (Ojeme, 1984) |
| "Specialization + fragmentation = extermination: A formula for the demise of graduate education" (Hoffman, 1985) |
| "Physical education and paranoia: Synonyms" (Thomas, 1985) |
| "Is there a discipline of physical education?" (Rose, 1986) |
| "Are we already in pieces or just falling apart?" (Thomas, 1987) |
| "Specialization, fragmentation, integration, discipline, profession: What is the real issue?" (Greendorfer, 1987) |

ceived in order to protect our discipline and profession; epistemologically speaking, however, it can hardly be qualified "a taxonomy of knowledge," but rather an act of academic camouflage.

Recently Greendorfer (1987) has critically examined the causes of the two schisms. She argues that the cause of fragmentation was the vertical direction taken by the developing subdisciplines without an eye toward horizontal or thematic integration. However, she views fragmentation as not necessarily an automatic outcome of specialization. If this specialization results in alternative configurations such as, for instance, the model suggested by Lawson and Morford (1979), then knowledge is not fragmented and dispersed but integrated. Lawson and Morford (1979), who identify their subject matter as Kinesiology and Sport Studies, use a holistic, integrated approach that draws from several disciplines. Their model transcends traditional disciplinary boundaries because it generates a thematical–horizontal integration. This framework represents a significant departure from the type of specialization/fragmentation that currently exists, but the model "needs more conceptual development relative to subject matter content" (Greendorfer, 1987, p. 63).

## The French Connection

In the Francophone world of physical education, the Canadian Roch Meynard introduced the term kinanthropologie in 1966. Kinanthropologie consists of an etymological combination of the Greek words κινειν (to move), ανθρωπος (man), and λογος (science), thus indicating the science of man in movement. The term was adopted as the title of an international francophone journal, edited in Liège (Belgium), from 1969 to 1974. The journal *Kinanthropologie* started with clearly formulated epistemological aspirations:

> Situated at the cross-road of numerous and diverse disciplines ranging from the biological sciences to the human sciences, kinanthropology has largely profited from their contributions. However, having come of age, the discipline must prevent itself being invaded and should fight against annexational tendencies. The specificity of Kinanthropology—as a science—resides in the consideration of its proper center of interest: man in the situation of movement, in the nature of the problems posed and in a particular approach to these problems. (*Kinanthropologie*, 1969)

In spite of these cross-disciplinary ambitions, the journal has been almost exclusively oriented to kinesiology and biomechanics. Needless to say, kinanthropology was not the only neologism proposed in the French language, but it had the benefit of a larger scope than, for instance, the concept of *Psycho-cinétique*, or science of human movement, introduced by Jean Le Boulch (1966, 1971) at about the same period.

From the very beginning of the French debate, Sheedy (1967, 1974a, 1974b), a Canadian, produced several philosophical contributions for the establishment of a so-called Theory of Physical Education:

> For us, the discipline of physical education falls within anthropology and therefore within the sector of the human sciences. . . . The anthropology mentioned . . . cannot be exclusively physical, social or cultural. It is part

> of the admittedly daring project of the integration of the knowledges of and about man. (Sheedy, 1974b, pp. 245-246)

Although Sheedy has laid the theoretical foundations for an integrating science of humans in movement, he himself seems to have remained skeptical and unproductive when it came to the specific and factual construction of such a cross-disciplinary science. "We are trying to integrate . . . but who is going to do the integration? Who is the superman or super-scientist who will be competent to pick all that [knowledge from other disciplines]?" (Sheedy, 1974b, p. 228).

This role was more or less played by Bouchard (1974), who prepared a paper for the international seminar on Concepts in Physical Education and Sport Sciences (Simri, 1974) at the Wingate Institute in Israel.[2] In his truly international overview, Bouchard came to the conclusion that the term physical education "is not only partially inadequate for identifying our professional endeavors within the educational system, but also completely inadequate for identifying our disciplinary activities" (Bouchard, 1974, p. 20). He listed about 30 different propositions made between 1953 and 1974 concerning the distinction between the discipline and the profession. These propositions included (apart from several classic denominators like Sport Science(s), Human Movement Science(s), Human Kinetics,[3] Kinesiology, and Kinanthropology) more exotic terms, for instance, Anthropocinétique, Homokinetics, Anthropokineticology, or Gymnologie. Bouchard himself identified physical activity as being the central thematic object of our discipline and therefore proposed the concept of Physical Activity Sciences:

> These Physical Activity Sciences . . . must integrate a certain amount of knowledge generated by other domains of study and research. The Physical Activity Sciences can be qualified as cross-disciplinary sciences. (Bouchard, 1974, pp. 125-126)

Physical Activity Sciences functioned as the official title of the 1976 pre-Olympic scientific congress in Quebec (Landry & Orban, 1978), but since then, it appears that the term has not garnered much academic and public support. In France the epistemological discussion has continued and has been stimulated especially by the publications of Parlebas (1971), who edited a lexicon of the so-called Science of Motor Action:

> The field of motor activities possesses a specificity; this orientation which implies the construction of an original object, has its consequences on the content of both the curriculum and the institutional organization. It represents without doubt the sole answer for the future [in order] to prevent parcelling and vassalage. (Parlebas, 1981, p.xi)

One of the latest results of the discussion in France is the appearance in 1987 of a new journal entitled *Science et Motricité*. This journal is edited by the Association of Researchers in Physical and Sports Activities, which has accredited itself with a pluridisciplinary vocation:

> *Science et Motricité* thus defines itself as a journal of science, technique and culture. . . . In the forms of sport or leisure, motor activity represents the common denominator which should facilitate the dialogue. (*Science et Motricité*, 1987).

## Germany: Sport Science or Sport Sciences?

The term Sport Science (*Sportwissenschaft*) made its first appearance as such in the German Democratic Republic (Erbach, 1964, 1966). In the Federal Republic of Germany, the starting shot for the debate on the scientific status of the discipline was fired by Schmitz (1966), who addressed the problem by asking the question of whether one should speak of a "science" of physical education or of sport (Schmitz, 1966). Willimczik (1968) subsequently picked up the gauntlet and provided a thoroughly elaborated formulation of epistemological criteria that need to be fulfilled in order to justify a so-called sport science. He mentions, among others, an independent body of knowledge, specific terminology and research methods, and specific organization. Without waiting for all these criteria to be met, a journal called *Sportwissenschaft* appeared in 1971 on the eve of the 1972 Munich Olympics. Grupe explained that it had been decided to use Sport Science as opposed to Sport Sciences as "an aim to strive for . . . as a plea for sport science in the sense of an "integrative science," which processes and summarizes the relevant findings from other scientific disciplines and integrates them from a specific perspective into a coherent body of knowledge, at the same time—however—carrying out substantial research of its own" (Grupe, 1971, p. 17). The mechanisms of integration and the precise meanings of the inter-disciplinary and the cross-disciplinary nature of this science were, however, not considered. It seems, therefore, that the choice of the singular was more of a strategic than an epistemological argument in order to prevent the premature fragmentation of this Sport Science into isolated subdisciplines.

Willimczik (1974), the early architect of an epistemological blueprint, did not share the same optimism and belief in a singular Sport Science when he reviewed the trends in scientific concepts in Germany up to 1974:

> This period—the period of development of sport science—is correctly referred to as a multidisciplinary period. . . . Cross-disciplinary and interdisciplinary sport sciences [sic] which involve a close co-operation between the various disciplines, although these are formulating the problems already, are still an unrealized aim. Therefore for the present time it is justified to speak about sport sciences. In the future when the sport sciences have developed to a totality we may have to speak of a sport science. (Willimczik, 1974, p. 16)

This opinion was shared by Ries and Kriesi (1974), who qualified the Sport Sciences as applied sciences because they rely on a great number of structurally diverse basic sciences. Six years later, Willimczik (1980) reviewed the situation of sport science from a comparative perspective. Although he used the singular term *Sportwissenschaft*, he had to admit that not much progress had been made concerning two criteria of a discipline: (a) specific research methods, and (b) organized knowledge (theory). Subsequently Willimczik (1985) attenuated this statement. He claimed that interdisciplinary sciences, such as sport science, are not subject to the philosophic criterion of uniqueness with regard to specific research methods and theory construction. Rather their meaning is justified through the reintegration of specialized disciplines and through practical relevance.

Haag (1979), using the singular, classified Sport Science in the category of theme-oriented sciences as opposed to discipline-oriented sciences. According to Haag, the theme-oriented sciences (e.g., Communication Science(s), Sexological

Sciences . . .) share the characteristics that they are interdisciplinary, involve relationships to several other discipline oriented sciences, often suffer from lack of recognition within traditional higher education, and at present, have a relatively small pool of well-trained personnel, research expertise, and opportunity for research. In a recent reconsideration, Haag and Morford (1987) have further explored the complex nature of sport theory—*Sportwissenschaften*—in the context of physical education teacher training. They concluded that,

> There is a theme and a disciplinary (theory field) approach in order to structure the body of knowledge of sport theory to be taught during the study. . . . Since 'Sportwissenschaften' [plural] is a cross-disciplinary scientific field to a certain extent the study of the respective relation sciences has to be considered as part of the study curriculum. (Haag & Morford, 1987, pp. 94-95)

Although the plural (multidisciplinary) and the singular (cross-disciplinary) concepts of Sport Sciences/Sport Science are constantly confused, the singular term Sport Science has quickly caught on and has systematically replaced the term Physical Education in the German speaking countries.[4] Whether this change of name has solved the problem of the epistemological identity remains open for discussion. Lenk (1979, p. 4) concluded that sport science remains a "multi-disciplinary aggregation science," while Heinemann (1985), who shares this opinion, further stated:

> Integration remains . . . problematic because problem formulation, problem observation and problem processing are separately solved by each (sub-)discipline and a common concept is still lacking to organize and integrate research. (p. 44)

## Human Movement: A Field of Study in Great Britain

A fourth tendency was clearly expressed in Great Britain when in 1973 the publication *Human Movement—A Field of Study* (Brooke & Whiting, 1973) appeared:

> Human Movement Studies and the application of knowledge about human movement extends far beyond the bounds of the practical field of physical education. (Whiting, 1973, p. ix)

In this attempt to justify human movement as a field of study, Curl (1973) tried to answer the question of whether the possibility of a unifying framework exists that will hold together and integrate the various disciplines that contribute to the field. He concluded that such a field of knowledge can profitably be organized and unified by some central object and that human movement is such a center of interest, "a natural organic unity." The claim of organic unity in Curl's (1973) account was, however, severely criticized by Renshaw (1975) in the very first issue of the *Journal of Human Movement Studies*. The editors of this journal, Whiting and Whiting (1975), stipulated that the journal's concern was "with information which serves to illuminate and integrate the diverse perspectives of the phenomenon of Human Movement" (p. 2) and that although

human movement derives its meaning from its context, "it is with the *movement* in context that this Journal is concerned and not with the context itself" (p. 3). Thus, it was made perfectly clear that a delimited approach was chosen: human movement rather than humans in movement! All in all, the "human movement" movement seemed to gain little impetus after Brooke and Whiting both left the United Kingdom.

Another new journal was created by Whiting in 1982 after he had moved to the Netherlands. The name changed into a singular *Human Movement Science*, and it was also recognized that some exchange with the professional area was worth taking into account:

> What needs to be strived for is a particular form of what Wilberg (1972) describes as "generated knowledge." That is, knowledge which arises in those fields of professional operation which focus on the influencing of human movement. (Whiting, 1982, p. 4)

This tendency to design a disciplinary Human Movement Science arouses some feelings of déja vu—déja entendu, especially when one considers the pioneering work earlier accomplished in this field by scholars such as Meinel (1960) or Buytendijk (1966). Sports Science gained status with the three BSc degrees in Sports Science at Liverpool Polytechnic in 1975. This had no links with physical education at all; instead it was taught as an interdepartmental course with departments in both Science and Engineering Faculties contributing to it. There was, strangely enough, no contribution from Physical Education, which was within the Faculty of Education.

Moreover, another interdisciplinary tendency has appeared in Great Britain with the establishment of the Society of Sports Sciences in 1977. This society launched the *Journal of Sports Sciences* in 1983, which embraces the disciplines of anthropometry, behavioral sciences, biochemistry, biomechanics, ergonomics, and other interdisciplinary perspectives, physiology and psychology. Quite different from the pluralist German Sportwissenschaft(e) concept, this British society expresses some reservations about the human sciences, except for those human sciences "where scientific methods are applied to sport and exercise" (Reilly, 1983, p. 1). The Society of Sports Sciences (S.S.S.) became the British Association of Sports Sciences (B.A.S.S.) in 1984, an amalgamation of S.S.S., the British Society of Sports Psychology, and the Sports Biomechanics Working Group.

## The Low Countries: Crossroads and Parting of the Ways

Situated at the cultural crossroads of the major European countries, the Low Countries (Belgium and the Netherlands) have always been a meeting place and melting pot of different ideas and tendencies. This position has, therefore, resulted in the adoption of both centripetal (integration) and centrifugal (fragmentation) concepts in the academic approach to physical education.

Physical education acquired academic status in Belgium probably earlier than in any other country in the world. As early as 1908, a Higher Institute of Physical Education was founded at the State University of Ghent (Laporte, 1984). Due to the fact that in the early part of this century Swedish gymnastics were considered the cornerstone of "scientific" physical education, the institute was incorporated in the faculty of medicine. The same procedure was followed when

other universities opened their doors to physical education programs: Liège, 1931; Leuven-Louvain, 1942; Brussels, 1945 (Université Libre) and 1961 (Vrije Universiteit). Because of the strong emphasis on biomedical and health sciences, these institutes also started training programs in physical therapy called kinesitherapy. Students obtain a licentiate degree after four years of study and after the submission of a licentiate thesis. Research qualifications and a doctoral thesis are required for a PhD in Physical Education or Motor Rehabilitation.

The new developments in the academic and the professional area of physical education in the 1960's have stimulated a claim to a more independent academic status. In Leuven, a first major step was made in 1976 when the Institute of Physical Education became a department in the faculty of medicine (Ostyn, 1977). In 1985, the Institute gained equal rights with the Faculty of Medicine and the Institute of Pharmaceutical Sciences, the three together composing the Group of Biomedical Sciences (Ostyn, 1985-86). This process of growing independence has obviously stimulated a more explicit formulation of a proper academic field and area for research. Together with specializations within the physical education curriculum, such as training/coaching, adapted physical education, leisure and recreation studies, and health education, postgraduate programs have emerged in physical anthropology[5], ergonomics, training/coaching, adapted physical education, and sport management.

In contrast to Belgium, physical educators in the Netherlands are trained in teacher colleges: the so-called Academies for Physical Education in Amsterdam, Arnhem, Groningen, The Hague, and Tilburg. Rijsdorp, who obtained a PhD in physical education in Belgium (Leuven), was the first to obtain the status of professor extraordinary in the science of physical education at the State University of Utrecht in 1969. However, this initiative did not result in the creation of a specific training program and degree.[6]

Rijsdorp's monograph, *Gymnologie* (1971), can be viewed as one of the first and most extensive efforts to identify and integrate "the science of motor action in an agogical framework" (Rijsdorp, 1974). He qualifies gymnology as being both a human science, focusing on the motor activities of humans, and an agogical science, assuming constant interaction between a so-called auctor (teacher/coach) and an actor (pupil/athlete). Although the term gymnology itself has been denounced on etymological grounds (Simri, 1974, p. 110), Broekhoff (1980, p. 93) has recognized the integrative possibilities of Rijsdorp's concept, but also its limitations:

> As a coherent field of scientific investigation, gymnology is at present still to be considered as a concept which will have to prove its usefulness in practice. . . . The possibilities of a coherent, scientific approach of physical education will depend in the first place on the creativity and the ingenuity for finding new ways to solve old problems.

In an epistemological essay, Renson (1975) perceived Rijsdorp's framework as too strongly educationally oriented and, therefore, too narrow to encompass the total picture of humans in movement. Renson proposed a two-dimensional taxonomy with a (multi-)disciplinary approach by the sport sciences on one axis and a cross-disciplinary approach of kinanthropology on the other. This model is further elaborated later in this discussion.

After several years of discussion and planning, a so-called Inter-faculty of Physical Education was finally created in the Netherlands at the Free University

of Amsterdam in 1971. The term interfaculty was chosen to stress the multidisciplinarity of approaches, which would focus on "the intentional influencing of human movement in the areas of movement education, sport and recreation, psychomotor therapy, physical therapy and rehabilitation" (Hoogendam, 1981, p. 3). Professional preparation in these areas was not considered an academic task; it was even argued that physical exercises, connected with such a training program, would be a risk to introduce a "corpus alienum" (sic) into the world of academe (see Hoogendam, 1981, p. 46)! This interfaculty has become a full-fledged Faculty of Movement Sciences in 1987.

Thus, different developments have occurred in Belgium and the Netherlands that contrast two diverging models. On one hand, the Belgian model has a long-standing academic tradition heavily based on the biomedical sciences. This tradition has always stressed its biocultural anthropological conception: the study and education of humans in movement. However, the link between theory and practice, or between so-called basic and applied sciences, has too often been a symbolic hyphen, not a well-designed bridge. On the other hand, there is the Dutch model which, because of a different historical and structural context, has institutionalized the divorce between the discipline (Faculty of Human Movement Studies) and the profession of physical education (Academies of Physical Education).

## Parts of a Puzzle: Four Major Conceptual Trends

An overview of the major conceptual trends, authors, terminology, and journals comprising the epistemological discussion is given in Table 2. Four conceptual trends can be identified in this synopsis. Traditionally, a discipline is characterized by (a) a particular focus or object of study, (b) a specialized method of inquiry, and (c) a unique body of knowledge. The study of human movement, not humans in movement, has been claimed as such a unique scientific domain, a field of knowledge not explored by other disciplines.

A multidisciplinary approach consists of the study of one central topic, for example, sport, from separate disciplinary perspectives, without a unifying concept. It is vertically oriented and, therefore, the outcome is the sum of various disciplinary approaches, or the so-called applied sciences (Hebbelinck, 1966, 1967; Ries & Kriesi, 1974; Van Peursen, 1980). Knowledge is borrowed from parent disciplines and applied to the practical problems of physical activity or physical education. The sport sciences or physical activity sciences represent this conceptual trend.

An interdisciplinary approach consists of the interaction between two or more different disciplines in the form of the communication of ideas leading to the mutual integration of the respective fields. Since an integrative paradigm is lacking, the orientation remains vertical and thematical integration is only partial. The concept of sport science can be viewed as such an interdisciplinary attempt.[7]

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. Kinanthropology is presented here as a holistic, integrated, cross-disciplinary science of humans in movement.

**Table 2**

**Comparative Overview of Major Conceptual Trends, Authors, Terminology, and Journals in the Scientific Approach to Humans in Movement**

| Geographical areas | Conceptual trends | Investigations<br>Epistemological contributions<br>Conceptual propositions | Terminology | Journals |
|---|---|---|---|---|
| North America | cross-disciplinary | Henry, 1964 | Physical education | *Quest*, 1964 |
| | | Ross, 1974, 1978, 1981 | Physical education | |
| | | Lawson & Morford, 1979 | Kinesiology & sport studies | |
| | multidisciplinary | Zeigler, 1985 | Sport & physical education | |
| Francophone Canada | cross-disciplinary | Meynard, 1966 | Kinanthropology | *Kinanthropologie*, 1969-1974 |
| | | Sheedy, 1967, 1974a, 1974b | Physical education | |
| France | | Parlebas, 1971 | Physical education | |
| Canada | | Bouchard, 1974 | Physical activity sciences | |
| France | | Parlebas, 1981 | Science of motor action | *Science et Motricité*, 1987 |
| Germany GDR | multidisciplinary | Erbach, 1964, 1966 | Sport science | |
| FRG | | Schmitz, 1966 | Sport science | |
| | interdisciplinary | Willimczik, 1968, 1980, 1985 | Sport science | |
| | | Grupe, 1971 | Sport science | *Sportwissenschaft*, 1971 |
| | multidisciplinary | Willimczik, 1974 | Sport sciences | |
| | interdisciplinary | Haag, 1979 | Sport science | |

(Cont.)

**Table 2 (Continued)**

| Geographical areas | Conceptual trends | Investigations<br>Epistemological contributions<br>Conceptual propositions | Terminology | Journals |
|---|---|---|---|---|
| Great Britain | disciplinary | Brooke & Whiting, 1973 | Human movement studies | |
| | | Curl, 1973; Renshaw, 1973, 1975 | Human movement studies | *J. Human Movement Studies*, 1975 |
| | | Whiting, 1982 | Human movement science | *J. Human Movement Science*, 1982 |
| | interdisciplinary | Reilly, 1983 | Sport sciences | *J. Sports Sciences*, 1983 |
| Low Countries Netherlands<br>Belgium | cross-disciplinary | Rijsdorp, 1971, 1974<br>Renson, 1975<br>Renson, 1980 | Gymnology<br>Kinanthropology<br>Kinanthropology | |

## Kinanthropology: An Integrated Paradigm for the Study of Humans in Movement

### *A Cross-Disciplinary Science*

At the outset, the term physical education is inappropriate to identify the academic study of humans in movement with its various professional applications. Etymologically, the term kinanthropology adequately refers to cross-disciplinary study of humans in movement. Kinanthropologists, or specialists in the area of humans in movement, represent the holistic physical education tradition. Epistemological and professional arguments for this claim are presented in a two-dimensional model in Figure 1. The disciplinary approaches are positioned on the vertical axis and the cross-disciplinary approach of kinanthropology is positioned on the horizontal axis. The different disciplines on the vertical axis range from the natural sciences through the human sciences. Human kinetics (or human movement science) falls midway on the scale as a natural bridge. Whereas the subdiscipline of kinesiology links with the natural sciences, motor learning links with the behavioral sciences. Kinanthropometry occupies a position in between. The different sport sciences are presented as applied disciplines on a parallel vertical axis. It should be mentioned that, just as sport sciences, one can speak of rehabilitation sciences when knowledge of a parent discipline is applied to the process of rehabilitating people. The term physical activity sciences (Bouchard, 1974), therefore, seems to be a more appropriate common denominator for this multidisciplinary or interdisciplinary vertical category.

Kinanthropology, the science of humans in movement in the context of sport, play, dance, physical exercise, work, or rehabilitation, is featured as a cross-disciplinary science on the horizontal axis. Instead of mere application of knowledge borrowed from so-called parent disciplines, this holistic approach integrates the physical–organic, the motor, and the behavioral components. These three components, represented in Figure 2 as an integrated triad, form the fundamental subject matter of the science of humans in movement (Renson, 1987).

Five different approaches or areas of specialization are identified within the cross-disciplinary science of kinanthropology (Renson, 1980):

1. *Developmental kinanthropology* studies the dynamic processes of physical growth, motor development, and sport socialization in their mutual interaction.
2. *Differential kinanthropology* studies the structure of physical, motor, and behavioral characteristics in their mutual interaction as well as the differentiation of these factors between different groups or categories.
3. *Social–cultural kinanthropology* studies to what extent social and cultural determinants affect physical, motor, and behavioral aspects in their mutual interaction.
4. *Clinical kinanthropology* studies the therapeutic applications of human movement in the interrelated areas of physical, motor, and behavioral disorders.
5. *Agogical kinanthropology* [8] studies the educational process in the interrelated areas of physical/health education, movement/safety education, and sport/dance/outdoor education.

Each of the five kinanthropological subdisciplines focuses on the physical–motor–behavioral trinity, although from a somewhat different perspective. The

| Sciences (Disciplines) | | Physical activity sciences (Sport & rehabilitation) (Applied disciplines) | Kinanthropology (Cross-disciplinary science) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Developmental | Differential | Social-cultural | Clinical | Agogical |
| Natural sciences | Physics<br>Chemistry<br>Biology<br>Physiology<br>Medical sciences | Biomechanics of sport & rehab.<br>Biochemistry of sport & rehab.<br>Human biology of sport & rehab.<br>Exercise physiology<br>Sport & rehab. medicine | Physical growth | Physical characteristics | S-C determinants of physique | Physical therapy | Physical education |
| Human movement science | Human kinetics | Kinesiology<br>Kinanthropometry<br>Motor learning | Motor development | Motor characteristics | S-C determinants of movement patterns | Psychomotor therapy | Movement education |
| Human sciences | Psychology<br>Pedagogy<br>Sociology & cult. anthrop.<br>Economics<br>Law<br>History<br>Philosophy | Sport & rehab. psychology<br>Sport & rehab. pedagogy<br>Sport & rehab. sociology<br>Sport & rehab. administration<br>Sport & rehab. law<br>Sport & rehab. history & comparative studies<br>Sport & rehab. philosophy | Psychosocial development | Psychosocial characteristics | S-C determinants of sport & play | Adapted phys. education | Sport & leisure education |
| Professional applications | | | Physical performance evaluation & guidance | Training & coaching<br>Ergonomics | Sport & recreation management | Physical ther.<br>Psychomotor therapy<br>Adapted P.E. | Phys. & health ed.<br>Movement & safety ed.<br>Sport/dance/ outdoor ed. |

**Figure 1 — Kinanthropology: An integrated paradigm for the study of humans in movement.**

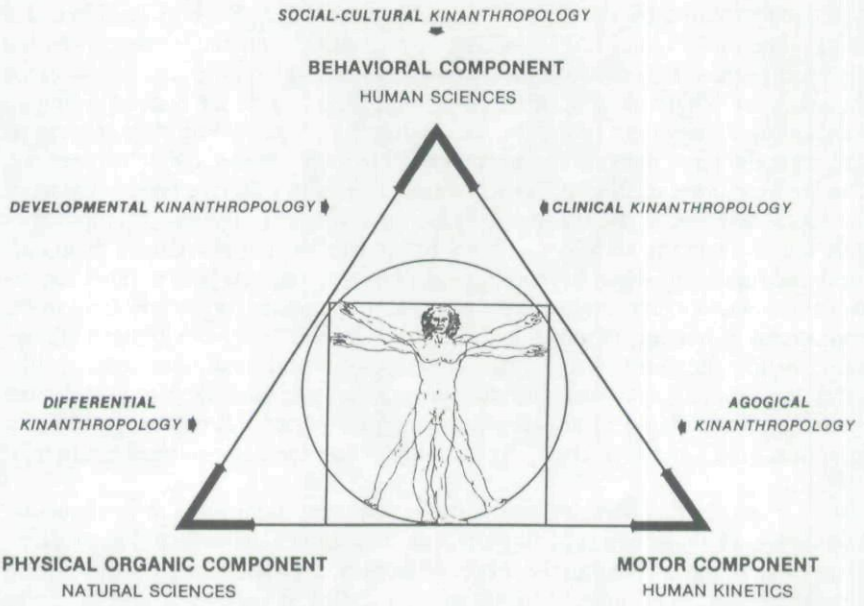


**Figure 2 — The kinanthropology triad and five different approaches, or kinanthropological subdisciplines.**

perspectives are, however, complementary and constantly interact. A holistic kinanthropological approach necessitates both specialization on one hand, and teamwork on the other, and is, therefore, essentially both disciplinary and cross-disciplinary in nature. Indeed, human kinetics or the science of human movement can be viewed as the disciplinary entrance and physical activity sciences as the multi- and interdisciplinary entrances of the kinanthropology model (see Figure 1).

## *A Problem of Integration*

The cross-disciplinary "horizontal" science of kinanthropology cannot be isolated from the disciplinary "vertical" physical activity sciences, from which knowledge is borrowed. However, without integration through one of the five mentioned kinanthropological approaches, then knowledge runs the risk of being sectarian—disciplinary and fragmented. It will often remain irrelevant for or unapplicable to human beings in a movement context.

This can be clarified by an example from the sphere of the social sciences in which the disciplinary sport sociologist is confronted with the cross-disciplinary sociocultural kinanthropologist. Sociologists can develop a genuine interest in sport as a social phenomenon. They thus study sport as a means to better understand the structure and functions of society (statics) and sociocultural change (dynamics). This way, sport plays more or less the role of the test rabbit, and it can generate relevant knowledge for testing sociological theories. One would expect that in this case the knowledge gained would be transmitted to the sports

field for application in an effort of "social engineering." Nevertheless, in order to translate this sociological knowledge into practice, to make it operational for the sportsperson, kinanthropological knowledge is also required. Indeed, whereas the sport sociologist is in the first place interested in a better understanding of society (socio-logy) via sport, the sociocultural kinanthropologist endeavors to gain an insight into humans in movement within their social and cultural context. The sociocultural kinanthropologist, therefore, tries to integrate knowledge from the social sciences to the study of humans in movement. The kinanthropologist thus selects from the sociological body of knowledge, but also draws from cultural anthropology, social psychology, and history. The aim is to unravel the sociocultural factors that determine the physical–organic, the motor, and behavioral component of humans in movement. Armed with this cross-disciplinary knowledge, he/she then strives to create better sociocultural conditions (appropriate sport organizations, physical education programs, sport facilities, etc.). The sport research area provides an excellent meeting ground for "close encounters of a scientific kind" between the sport sociologist and the sociocultural kinanthropologist.

Obviously this complex study matter requires, alongside the fundamental knowledge of the kinanthropological *text* (humans in movement), specialized knowledge of the sociocultural *context*. Moreover, it is essential for sociocultural kinanthropologists to engage in an ongoing dialogue with their colleagues in developmental, differential, clinical, and agogical kinanthropology in order to construct a true holistic picture of humans in movement.

The viability of the kinanthropology paradigm and the benefits of cross-disciplinary research were demonstrated in two major projects undertaken at the University of Leuven. The team that carried out both the Leuven Growth Study of Belgian Boys (Ostyn et al., 1980) and the Leuven Growth Study of Flemish Girls (Beunen et al., 1982), was composed of research workers who looked at physical fitness from several kinanthropological perspectives. Physical fitness evaluation included anthropometric dimensions, physiological and motor ability tests, sport and physical activity inventories, health knowledge, personality assessment, and sociocultural information. These data sets were, however, not broken down into isolated disciplines of physical anthropology, exercise physiology, motor fitness, sport psychology, sport sociology, and so on. Rather, a cross-disciplinary bio-cultural approach, as Malina (1980) qualifies it, was adopted. The impact of the social determinants, for instance, was not limited to the sociological area of sport participation, but also included the social differentiation of physical growth and motor characteristics (Renson et al., 1980).

### *Academic Education, Research, and Professional Perspectives*

With regard to educational programs, the following citation of Brooks seems to express the current opinion:

> Undergraduate students are required to take courses such as anatomy, chemistry, physiology, physics, statistics, history, psychology, anthropology, and sociology to prepare them for advanced, upper-division course work in physical education [which we would replace by the term kinanthropology]. . . . When students apply knowledge of other disciplines to understand human movement, then the approach is cross-disciplinary. (Brooks, 1981, p. 5)

This shows that Brooks expects the students themselves to perform the difficult integration task. However, a laissez faire attitude, a most common observation in P.E. training programs, leads to a lack of epistemological insight among the students in the specific scientific status of their own (cross-)discipline.

Academic education in kinanthropology supposes a well balanced and systematically built up curriculum. It should start with a relevant selection from the disciplinary Natural Sciences and Human Sciences (see first vertical column in Figure 1), followed by the disciplinary Human Movement Sciences (kinesiology, kinanthropometry, and motor learning) and the applied Physical Activity Sciences (see second vertical column in Figure 1) to be completed by the integrated kinanthropology paradigm (developmental, differential, sociocultural, clinical, and agogical). Incipient specialization in one of these five kinanthropological fields can start at the graduate level (optional courses or thesis), but true specialization seems to be indicated at the postgraduate level.

Concerning the research structure of a kinanthropology department, both the disciplinary and the cross-disciplinary tendencies should be represented. The three major components of Human Movement Science (kinesiology, kinanthropometry, and motor learning) as well as the (applied) Physical Activity Sciences offer a good basis for the establishment of specialized research labs or seminars. In order to actualize the holistic integrative premises on the other hand, transdisciplinary research units (departments) can be established and trandisciplinary research projects can be started in the different kinanthropological fields (see Figure 1).

Each of the five kinanthropological approaches outlined in the model provides specific professional outlets. Developmental kinanthropology opens professional perspectives in physical performance evaluation and guidance. Differential kinanthropology is applied in training and coaching. Social–cultural kinanthropology forms the basis for sport and recreation management. Clinical kinanthropology leads to the professional areas of physical therapy, psychomotor rehabilitation, and adapted physical education. Agogical kinanthropology is translated into the practice of physical education (in the strict sense of the word) and health education, movement and safety education, and sport/dance/outdoor education.

### *A Problem to Overcome: Terminology*

Whereas Brooks (1981) states that a discipline stands or falls in its accomplishments and not in its name, it is our opinion that a unifying paradigm and a common denominator is a sine qua non in order to profile the specific cross-disciplinary body of knowledge of humans in movement and its various professional possibilities. ''Nomen sit omen'' is an appropriate Latin expression: Let the name kinanthropology be an omen to overcome the anachronistic neglect of our academic and professional identification. Just like physicists, biologists, psychologists, sociologists, and so on, there is a need for an internationally uniform and etymologically sound identity. Whether active in research, teaching, or therapy, the heirs apparent to the legacy of physical education should stand up and make known their common denominator: kin-anthropo-logy!

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## *Notes*

[1]In a reexamination of his 1964 paper, Henry (1978, p. 19) admitted, "I am uninformed as to what changes have occurred in Europe, Britain [sic] and other parts of the world."

[2]Unfortunately Bouchard did not participate in the seminar, but his paper appeared in the French Canadian journal *Mouvement*.

[3]Faculties of Human Kinetics were already established in anglophone Canada in the early 1970s, mainly in the province of Ontario.

[4]Nevertheless, it should be mentioned here that at the occasion of an Austrian conference on Science–Sport, the plural term *Sportwissenschaften* was constantly used (Nowak & Seidler, 1981).

[5]A postgraduate program in Physical Anthropology was created in 1983. The program is organized by the Leuven Institute of P.E. and is accessible to students from the Biomedical Sciences. It reflects the strong anthropological emphasis in the Belgian P.E. tradition.

[6]In 1985 an undergraduate program and diploma in Movement Sciences was created within the Faculty of Psychology at the State University of Utrecht.

[7]The concept of interdisciplinarity was extensively discussed in the article "Leisure Sciences and Leisure Studies: Indicators of Interdisciplinarity" by D'Amours (1984).

[8]Agogical is derived from the Greek verb αγειν, which means "to educate, to provide direction."