Introduction

Cross-cultural and comparative research advances understanding of the environmental influence in the organization of actions. Actions—that is, purposive and intentional organized behavior—are composed when the person-environment relation is regarded as optimal and should be stabilized; when the optimal fit is in danger and has to be protected; or when the current fit does not actually fit the individual intentions and should be modified (Hackfort, 1986; Nitsch & Hackfort, 1981). In such cases, the task is to work to keep the fit, to protect against disturbances, or to overcome actual or anticipated discrepancies. Psychological processes refer to the perception of such action situations characterized as person-task-environment constellations; and by actions, the psychological processes—cognitive processes, affective processes, motivational processes, and volitional processes—are developed. From a long-term perspective, this interplay of organizing actions by psychological processes and developing psychological processes in action situations is essential for creating both personality and culture.

Cross-cultural and comparative research has been used in sport science disciplines like sport sociology, pedagogy, and anthropology, but such a paradigm does not have a tradition in the field of sport and exercise psychology. Several authors (e.g., Duda & Allison, 1990) already pointed out the lack of attention to potential cultural variation in the field of sport and exercise psychology. They emphasized that “not only have these (cultural) factors not been used as descriptors of sampling frames, but there has been no systematic attempt to deal with race and ethnicity as conceptual and meaningful categories of human experience” (p. 117). These authors suggested that the existing cultural variability in motor development, physical as well as sport performance, and exercise involvement, should be further analysed by sport psychologists at a conceptual level to identify possible psychological factors (such as motivation, expectations, perceived ability, etc.) influencing cultural differences.

In 2001, the ISSP (International Society of Sport Psychology) initiated a keynote on the issue by Gangyan Si from China, and in the following years, some authors contributed to fill this research gap and to initiate cross-
cultural investigations in sport and exercise psychology. This paper refers to the research methodology used in the studies. Furthermore, it attempts to develop a systematic approach and to clarify which methodology and what kind of conceptual perspective may contribute to an appropriate cross-cultural perspective and comparative research in sport psychology from an action-theory perspective. By this perspective a methodological approach for such research is outlined as it focuses on the person as well as on the environment, including ecological and socio-cultural circumstances with respect to the person-task-environment relation.

For this purpose, a description of the logic of comparative methodology in sport and exercise psychology is provided. In this part, the subject matter of sport and exercise psychology from an action (German: Handlungs-) psychology perspective briefly is described and followed by a comprehensive outline of epistemological aspects of comparative methods in general. Furthermore, the characteristics of comparative research methodology in sport psychology are highlighted. In the third chapter emphasis is given to a review of cross-cultural research methods used in sport psychology. Finally, in the last section possible research topics and methodological challenges for future research in cross-cultural sport and exercise psychology are discussed. But first some reflections on Comparative and Cross-Cultural Sport and Exercise Psychology are presented.

Reflections on Comparative and Cross-Cultural Sport and Exercise Psychology

In 1963, Kroeber and Kluckhohn noticed around 160 different definitions of “culture.” A fundamental idea is: “Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievement of human groups ... the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of further action.” (Boesch, 1991, p. 29).

Culture includes concepts of men, philosophical basics and traditions. Theories are culturally (socio-cultural space and time) shaped perspectives and constructions as well as cultural means of reconstructing world, behaviour, and feelings. For Cross-Cultural (Sport and Exercise) Psychology a trans-cultural theory would be necessary.

With special respect to methods (research methods) it has to be reflected that they should be regarded to be culturally shaped strategies and instruments, which are shaping the reconstruction of culture/cultural circumstances. Consequently for Cross-Cultural (Sport and Exercise) Psychology a trans-cultural methodology would be necessary. Fundamental methodological orientations in Cross-Cultural (Sport and Exercise) Psychology can be emphasized:

- Methods to detect commonalities and universalities.
- Methods to detect differences and specialities/specificities.

A sophisticated understanding of Cross-Cultural Psychology should be based on a sufficient concept of Cultural Psychology and to understand the idea of Comparative Psychology makes it necessary to clarify Intercultural Psychology. Some brief suggestions to distinguish and differentiate the perspectives for further discussion are as follows.

Cultural Psychology

In cultural psychology, the subject matter is the human being as a cultural being, a person who is organizing his or her behaviour intentionally, goal directed, purposive in a cultural context and who is aware of her- or himself, that is reflexive. From this (cultural psychology) perspective the subject matter is the human being acting in situations essentially composed of cultural factors. The action theory approach seems to be an especially appropriate frame for the description and explanation of this subject matter.

Intercultural Psychology

The focus of intercultural psychology is on such circumstances in which people from various and different societies are coming together in meaningful (action) situations. Emphasis is given to detect compatibilities and incompatibilities with regard to attitudes, beliefs, emotions, etc.

Comparative Psychology

To compare comparative psychology with, for example, comparative pedagogy, a suitable characterization is to
highlight a nomothetic-positivistic oriented general approach: focusing and comparing principles of behavior and psychic processes in different individuals and situations/cultural settings.

**Cross-Cultural Psychology**

In cross-cultural psychology, cultural (social, material, symbolic) factors are considered and analyzed to be essential in organizing and the regulation of actions. From a methodological point of view, the approach is based on a trans-cultural perspective, looking for criteria to differentiate two or more cultures; it includes cultural, inter-cultural, and comparative psychology perspectives.

**The Logic of Comparative Methodology in Sport Psychology**

In terms of the logic behind the application of different cross-cultural research methods in sport psychology, the nature and subject matter of the research must be considered for the choice of a concrete methodological approach and measurement in the first place.

In addition, it should be reflected that the comparative method itself can be selected with different attitudes. This fact is highlighted, together with the situational context of behavior, in the description of the epistemological aspects behind comparative methodology. These reflections are fundamental for an appropriate choice of a comparative methodology in sport and exercise psychology.

**Relevant Features of Sport and Exercise Psychology**

Research methodology used in a specific discipline necessarily has to be chosen relative to the characteristics of the discipline itself. The specific characteristics of the discipline set some restrictions on the methods to be used.

For sport and exercise psychology, the social and cultural perspective is essential. From a social science perspective, it requires research methods that go beyond those methods which rely exclusively on experimental, quantitative approaches and which generate laws and predictions. To study and investigate the complexity of human behavior, some authors like Gaddis (1992) suggest the use of a composite of approaches. Furthermore, authors like Brawley (1992) and Schilling (1992) recognize the necessity of a composite of approaches to prevent the danger of research fragmentation.

The nature of the subject matter of sport and exercise psychology also has methodological implications. Briefly, it can be said that sport and exercise psychology studies actions in sport and exercise settings. Actions (Handlungen; see Hackfort, Munzert & Seiler, 2000; Nitsch, 2000; Nitsch & Hackfort, 1981, 1984) are a special class of behavior, which are defined to be intentionally organized, goal-directed, and purposeful.

The following paragraphs will illustrate first, how the fact of studying actions affects the methods to be used; and second, with the help of the action (Handlungs-) theory approach to psychology, how this fundamental entity (subject matter) is understood in a situational (sport and exercise) context.

There are two characteristics of intentionally organized behavior (actions) relevant to the choice of the research methodology:

1. Actions are complex phenomena determined by internal and external influences.

   First, at an intra-personal level, acting is organized and regulated by cognitive, emotional, motivational, and volitional processes; individual and social characteristics; and physiological processes. Thus, the study of actions and the analysis of acting requires integrative approaches. As Singer (1994) recognizes, research on human behavior (he refers exclusively to the domain of sport psychology) demands multidisciplinary approaches: On the one hand, cognitive, behavioral, and physiological dependent variables have to be studied together (including the various interrelations between these variables). On the other hand, integration with subject fields related to psychology (e.g., biology and sociology with regard to the person as a bio-psychosocial subject) is necessary. This last aspect demands a more comprehensive scholarly background of researchers and cooperation by teams of researchers, because these internal variables present great individual differences. Therefore, their study requires a composite of qualitative and quantitative methods. Quantitative methods generate general laws and predictions, while qualitative methods follow a final approach oriented toward regularities and probabilities (see Hackfort, 1990).

   Second, actions are influenced by external variables. Therefore, their study requires comparative methods appropriate for cross-cultural research to validate theoretical constructs across cultures and to find out external influences.

2. Actions may only be understood adequately by
considering their objective expression (observable behavior) as well as subjective aspects through indicators of individual perceptions and appraisals, and mental structures and processes.

The study of subjective aspects requires multidimensional approaches (e.g., to investigate cognitive and emotional variables) to cross-validate the relationship between observable and non-observable variables (Hackfort & Schlattmann, 1988, 1994; Hackfort, Munzert, & Seiler, 2000). It also requires theoretical research and the use of valid indicators (these indicators need to have the same meaning and functional use across different cultures).

Furthermore, the action theory approach focuses on behavior in a specific setting, which is not only influenced by the objective situational assimilation but essentially by the subjective appraisal of the situation as a person-environment-task constellation. With respect to the person, substantial psychological components are differentiated into cognitive, motivational, volitional, and emotional aspects regulating actions. The environment can be subdivided into ecological, material, and social aspects. The third component of the action situation is the task. Tasks can be differentiated by using various criteria (e.g., motor and mental aspects). To analyze these components, various methods have to be considered and the different data have to be integrated (see Hackfort & Birkner, 2003).

According to this action psychology perspective, sport and exercise have to be understood as complementing the person's characteristics in relation to the characteristics of the environment, with respect to the task at hand. This fact highlights the necessity of considering the situation in the interpretation of behavior and demands comparative methods for finding out differences and similarities through different environments. Sport and exercise tasks are highly standardized by rules and regulations and are therefore similar throughout the world, which makes this discipline an excellent framework for comparative research.

Finally, the goals of sport and exercise psychology—such as increasing human achievement and welfare in and through the medium of movement—also have implications for research. They require applied research and the development of theory-based technologies and intervention programs. They also require comparative research to find out optimal practices for various special contexts.

Epistemological Aspects of Comparative Methodology

This section focuses on different attitudes toward cultural variation that may be a solid basis for different research orientations. The section also highlights the implications of the definition of human behavior within an action situation for comparative research.

Attitudes Toward Culture Variation

The comparative approach is one of the fundamental research paradigms in psychology. Psychological conceptions and measurement usually have their meanings essentially by comparative means, i.e. when data are compared (see norms). Without comparison with the norm of certain populations (between subjects design) or situations (within subjects design), the meaning of psychological variables such as IQ or emotional response (Hackfort & Schlattmann, 1995) cannot be understood and evaluated. This acknowledgement may bring awareness of the importance of the population and situations studied, especially on cultural differences in psychology studies. With respect to considerations on cross-cultural difference and similarity in current psychology domain, three kinds of attitude can be generally drawn out (Berry, Dasen, & Sartorius, 1988).

The first attitude is absolutism. It is to entirely ignore the influence of cultural factors on research objects. All psychological and social phenomena are viewed as outcomes of fixed position, and are studied, evaluated, and considered with fixed standards. Usually, these standards come from the cultural background of the researchers themselves.

The second attitude is relativism. It is an approach that examines phenomena with respect to cultural effects. Psychological and sociological phenomena are explained with respect to the cultural background from which they come. Such an attitude offers a good opportunity for insight into the nature and range of human variation. However, a consequent relativism usually neglects comparability among different cultures. It is hard to draw data together in order to get common senses among human beings with this approach.

Instead of an emphasis on individuality of social and psychological phenomena in each culture, the third attitude, universalism, assumes that there are basic psychological processes and functions that are shared by all people, although they are developed, deployed, and displayed differently in different cultures. It is believed...
that different cultures play a set of variations on the universal human psychology.

According to these three attitudes toward cultural variation in social and psychological phenomena, different perspectives and approaches of cross-cultural research are developed. By considering universalism, the cross-cultural approach is a comparison method or instrument rather than the objective of the study itself. Particularly with regard to theory, cross-cultural approaches have been applied as a necessary method to examine the generality of certain concepts like goal orientation (e.g., Kim & Gill, 1997; Li, Harmer, & Chi, 1996; Pan, Zhang, & Si, 1999) or emotion display and control (e.g., Si & Hackfort, 1998) across different cultures.

On the other hand, approaches with relativism perspective tend to describe differences in research objects in different cultures and, further, to discover the source of such differences with cross-cultural comparisons. This relativism approach was highly appreciated in most practice-oriented studies (Hartmann-Tews, 1994; Scration et al., 1993). Probably due to the interventional orientation, the situation including concrete cultural surrounding has to be taken into account to ensure the effects.

In summary, a cross-cultural psychology study is the study of similarities and differences in individual psychological functioning in various cultural and ethnic groups; of the relationships between psychological variables and socio-cultural, ecological and biological variables; and of current changes and interrelations in these variables (see Berry et al., 1996).

**Situational Context**

The basic relational system and starting point for conceptual, methodological, and applied issues for sport and exercise psychology from an action theory perspective is the action situation. The situational components person, environment, and task have to be considered both separately and as they relate to each other. Research methods, for example, could emphasize only one situational aspect and neglect the other two. This approach may lead to severe trouble because results could not be transferred into another situational context. Therefore, research methods have to consider and to refer to all three situational components. Taking the cross-cultural perspective into account, it becomes obvious that the situational context may differ severely in different countries or regions. In some cultures, for example, pride after a victory over a strong sportive rival is demonstrated without inhibition, while athletes in other countries suppress such a feeling as a sign of respect for the defeated opponent. Therefore, a lot of qualitative and quantitative findings cannot be transferred on a one-to-one basis from one culture to another without taking all three situational aspects and the specific constellation of those aspects into account.

The study of the role of ethnicity might contribute to the uncovering of variability in actions in sport and exercise if it is systematically incorporated into sport and exercise psychologists’ research agendas. The effect of such variability leaves the theoretical understanding of the human condition in these contexts biased and distorted at best (Duda & Allison, 1990). Thus, socialization effects on personality based on environmental, socio-cultural differences and the understanding of special tasks have to be considered for comparative means.

**Characteristics of Comparative Methodology in Sport Psychology**

Based on methodological requirements set up by the characteristics of the subject matter of sport and exercise psychology, and the existence of basic attitudes when doing cross-cultural research, the comparative methodology in sport and exercise psychology should have the following characteristics:

First, researchers have to be aware of attitudes and should try to combine and complement them through different studies. Second, such research has to be theory driven on the basis of an appropriate conceptual framework. Third, it requires multidisciplinary approaches by research teams. Fourth, it requires cross-cultural valid indicators for non-observable constructs. Finally, it requires the use and integration of qualitative and quantitative methods in a sound methodological strategy. As Duda and Allison (1990) point out, cross-cultural research requires that we rely more heavily on qualitative assessment methods such as ethnographic and ethno-methodological techniques, interviews and observations, insiders or key informants, and contextual analyses. In addition, quantitative methods such as fixed-item questionnaires are appropriate methods, but great care must be taken that in organizing surveys and applying scales in comparative research, validity is proven in the cultural context (ecological validity). One has also to be sure not to violate principles of functional, linguistic, and conceptual equivalence when conducting such studies. Factor analysis, multidimensional scaling, and meta-analysis have been appropriately used to
demonstrate the cross-cultural validity of psychological instruments and to identify cultural variation in psychological constructs.

**Review of Cross-Cultural Research Methods Used in Sport and Exercise Psychology**

Comparative designs are popularly applied in empirical and phenomenological-oriented sport and exercise psychology studies. The most basic division of comparative method in sport and exercise psychology is the distinction of between-subjects/group and within-subjects/group design. The first kind of design is usually person and environment focused; it compares the influence of different populations and environments (gender, age, experience levels, race, cultural background, etc.) on performance of certain (cognitive or motor) tasks. The within-subjects/group design mostly focuses on the possible effect of treatment/situation (pre- and post-event, etc.) with objection population.

In cross-cultural comparison, between-subjects design is effective to indicate differences of treatments (cultures), while within-subjects design might be useful to discover influences of treatment (cultures). Most cross-cultural comparative studies refer to the first kind of design because of the consideration of comparability of experimental condition and the purpose of cross-cultural comparative design. Of course, cultural background is more complex than a single, controllable treatment in research actualization. A case-oriented qualitative comparative approach, instead of variable-oriented quantitative approach, is considered to be more effective and necessary to study complex and more conjunctive cultural variations, especially in within-subjective design. This will be discussed in more detail in the following section.

To sum up, both types of designs should be included in order to be able to analyze the real influence of cultural aspects. Analyzing the performance of different persons through different cultures (within-subject design). This last design presents difficulties in the control of other variables, but if it is used in combination with the first design, it may provide complementary information.

In sport and exercise psychology studies, the cross-cultural comparative approach had not been highlighted until recent years. Already in 1990, a review from Duda and Allison from the *Journal of Sport and Exercise Psychology*, including its publications between 1979 and 1987, illustrated the lack of attention to potential ethnic variation. It seems that in the last years, the situation has not changed much. A report from Weinberg et al. (1997) indicates that between 1979 and 1997, less than 10 percent of all empirical papers published in the *Journal of Sport and Exercise Psychology* (one of the most important sport and exercise psychology publications in North America) contained data from outside of North America. Moreover, less than one percent of them compared samples from different countries out of a cross-cultural perspective.

In the *International Journal of Sport Psychology*, the official journal of the International Society of Sport Psychology (ISSP), there were only 7 of 152 (4.6%) contributions with a focus and content on cross-cultural and racial comparison during the time span from 1996 to 2000 (vol. 27–31). In *The Sport Psychologist*, an application-oriented sport psychology journal, no cross-cultural relevant contributions were published from 1996–1999. The 2001 initiative by the ISSP (see above) was able to increase interest. Research and the report of results from this research gained more visibility by the end of the first and beginning of the second decade in the 21st century in sport and exercise publications (see Ryba in this volume).

In summary, cross-cultural studies in sport and exercise psychology can be classified with various standards, design purpose and data collection. First, by the attitude towards cultural variety. Second, according to their design purpose, studies can be assigned to the categories of universalism (theoretically oriented) and relativism (practically oriented). Third, cross-cultural studies can be classified into quantitative or qualitative and single- or multi-dimensional approaches. Other means to classify cross-cultural sport psychology studies include a differentiation between theory and practice orientations.
**Research Attitudes, Theoretical and Practical Orientations**

Although most studies in sport and exercise psychology are theory driven, with some applied intentions and practical implications, the classification of theoretical and practical orientations has a long history in cross-cultural comparative studies. Indeed, these kinds of categories are closely related to the attitudes toward cultural variation that have been mentioned above.

A theoretically oriented comparison usually derives from a universalism perspective. Studies on the generality of goal orientation theory and its questionnaire, TEOSQ, in sport domain may be an example of this approach. Since both the original theory and the measure (TEOSQ; Duda & Nicholls, 1992) had been developed in the U.S., the extent to which they may be culturally biased is unknown. Questions like the existence and relationship of two orientations (ego and task), the possibility of other orientation(s) in different cultures, and the cross-cultural validation of TEOSQ are considered to be necessary to examine across various cultural backgrounds (Duda & Allison, 1990; Pan, Zhang & Si, 1999). Therefore, series of cross-cultural comparison studies were carried out (Kim & Gill, 1997; Li, Chi, Harmer, & Vongjaturapat, 1994; Li, Harmer, Acock, Vongjaturapat, & Boonverabut, 1997; Pan, Zhang, & Si, 1999). The content and generality of the goal perspective theory itself, which became a main focus in the achievement motivation research in sport and exercise and academic settings in various countries (Duda & Nicholls, 1992; Li et al., 1997), have gained much advantage from these studies.

Additionally, researchers in theory-oriented studies usually like to look at sport and exercise behaviors as a tool, treatment, or condition that provide the exciting possibility to psychology studies to achieve a deeper, more basic understanding of human psychological processes and characteristics. This may be because sport activities have many commonalities in physical requirement, task structure, play rules, etc. (e.g., physical, biological, and contractual aspects) across various cultural backgrounds. And at the same time its social, cultural, and functional aspects vary according to the cultural background. For example, at the Olympic Games, various athletes from different countries, races, and cultures play at the same field under the same rules with a fair play spirit.

Therefore, according to Si and Yao (1999), “a well-designed cross-cultural study can help us to know and understand more social, psychological aspects which influence sport performance in different races” (p. 38). For example, comparative studies on emotion may lead us to a better understanding. In the development of psychology on emotion(s), there are two basic trends to explain and study human emotion phenomena: One is a neuro-physiological direction (Cannon, 1915, 1927, 1931, 1932; James, 1884; Lange, 1885), and the other is a cultural-psychological direction (Averill, 1982; Ekman, 1984; Kemper, 1978; Plutchik, 1962, 1965, 1991). Sport behavior provides a very good field for studies on the nature of emotion genesis, response, experience, and expression (e.g., Hackfort, 1991, 1999; Si, 1993, 1995; Si & Hackfort, 1998; Willimczik, Rethorst, & Riebel, 1986).

Practice-oriented studies (see Table 1 for a comparison with theoretical orientation), on the other hand, are relativism based and tend to use a cross-cultural comparison as an approach to get more effective references that can help to enhance performance. Good examples for this approach are studies on athletic career transition. Increasing empirical studies (e.g., Huang, Schmidt, & Si, 1999; Huang, Schmidt, Hackfort, & Si, 2001; Lavallee & Wylleman, 2000; Schmidt, Si, Huang, & Hackfort, 1999) have been carried out in different countries and various kinds of sport systems. Based on these findings, new or updated athletic career assistance and counseling programs are discussed and implemented.

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**Table 1.1: Differentiation between theory and practice oriented cross-cultural sport psychology studies.**

<table>
<thead>
<tr>
<th>Category of Study</th>
<th>Cultural perspective</th>
<th>Meaning of sport and exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Oriented</td>
<td>Universalism</td>
<td>Tools to get general psychological knowledge</td>
</tr>
<tr>
<td>Practical Oriented</td>
<td>Relativism</td>
<td>The final aim of study is to enhance performance in sports and exercise</td>
</tr>
</tbody>
</table>
Quantitative and Qualitative Approaches

Another important way to analyze comparative studies in sport psychology is by using different techniques of data collection and evaluation. Of course, data collection and evaluation is only the surface layer of this category approach. Indeed, the essential meanings of quantitative and qualitative methods are related to the perspective of a researcher on the nature of human behavior. If he or she would study human behavior as a movement of object which can be described, explained, and predicted with causal logic, this leads to a certain technique of data collection. On the contrary, the view of human behavior as an intentional, goal-directed, and purposive action contains a different approach or may include and integrate several and different methodological approaches (Hackfort, 1990; Hackfort, Munzert, & Seiler, 2000; Polkinghorne, 1990).

Quantitative Approach

From a philosophical viewpoint, the quantitative approach is mostly empirical and positivism based. Epistemologically, the quantitative approach is empirical, reductive, and structural oriented. This means that comparative researchers use variable(s) that could be quantified to dis-aggregate investigated object(s) and to reveal significant commonalities and differences among groups. This quantitative approach (e.g., Anshel, Williams, & Hodge, 1997; Asci, Asci, & Zorba, 1999; Hale, James, & Stambulova, 1999; Kaisidis-Rodafinos, Anshel & Sideridis, 1998; Kolt et al., 1999; Li, Harmer, Acock, Vongjaturapat, & Boonverabut, 1997) usually requires large samples to get general conclusions within a certain range. In cross-cultural comparative research, to achieve the equivalence between different language versions, double direction translation and revision procedure is used as a common technique. Statistical methods applied include Exploratory Factor Analysis (EFA; Asci et al., 1999; Kolt et al., 1999) and Confirmatory Factor Analysis (CFA; Hale et al., 1999; Li et al., 1997), between group homo-variation and/or multivariate analysis (ANOVA/MANOVA, Chelladurai et al., 1987; Kolt et al., 1999) and other correlation tests (Kolt et al., 1999).

Since the cultural influences on an individual’s psychological processes and actions always work in a complex conjunctive way, it seems impossible to retain the complex original face of cultural variations by single or several independent quantified variables. This is an unavoidable demerit of the quantitative approaches. However, multivariable and multilevel linear methods are frequently used in these studies as an attempt to overcome this shortcoming (Dow, 1991).

Qualitative Approach

Due to increased awareness of the importance of subjective experience of athletes, qualitative phenomenological paradigms have been viewed as an important and necessary approach to gain knowledge and information in sport psychology (Dale, 1996; Strean, 1998; Tenenbaum & Bar-Eli, 1995). The qualitative comparative approach is often founded by phenomenalism. By this paradigm, the influence of cultural background on the action process (including psychology processes) would not be viewed in a separated, isolated way (by quantified variables). Instead, a contextual, conjunctive perspective is emphasized in the comparison. The typical methods employed in the qualitative approach include life-story interview, verbal analysis, single case observation, etc. Correspondingly, the validity criteria of qualitative inquiry are also different from those of the quantitative strategy (Sparkes, 1998). The qualitative approach has natural merit in cross-cultural comparative studies due to its historic and contextual case-oriented perspective (Ragin, 1987). In Hayashi’s (1996) investigation on individual differences and social contextual factors of achievement motivation in physical activity, semi-structured interviews were conducted in 5 Hawaiian and 5 Anglo-American participants. Not only individual difference and cultural influence, but also interactive effects were obtained through content analysis of interviews.

However, since the qualitative approach often proceeds with a huge amount of different case information, it usually includes limited cases. And mostly, obtained information is interpreted as a whole unit on the functional level (rather than the structural level as in quantitative approach) for each single case. Compared with quantitative approach and its large sample, the generalizability of qualitative results is somewhat limited (see also Ragin, 1987). This might be one reason for a lack of extensive qualitative studies in cross-cultural comparative sport and exercise psychology. In all reviewed studies, qualitative analysis was usually applied as a supplement to or comment of quantitative results. Nevertheless, this kind of combination (of quantitative and qualitative approach) is gaining more and more importance in cross-cultural sport and exercise psychology studies. For
example, in the study by Kaissidis-Rodafinos et al. of 38 Australian and 75 Greek basketball referees, in addition to a quantitative survey, a qualitative self-report and content analysis were applied to examine cultural difference in personal thoughts, feelings and reactions to 15 potential stress sources. Si and Hackfort (1998) also applied both quantitative and qualitative approaches to study commonalities and differences between German and Chinese elite athletes on their emotion presentation and control under competitive situation.

Cultural Considerations in Methodology

With respect to the brief review above on categories and studies in cross-cultural sport and exercise psychology, some general challenges of research methodology need to be highlighted with regard to future research. These considerations could be classified into two interrelated aspects: comparative requirements and challenges from cultural differences. The first aspect includes common methodological remarks for every kind of comparative study such as homogeneity of comparative objective groups (samples) and collected data; the selection of the appropriate comparative method and so on. Methodological challenges related to the second aspect mainly derive from differences between compared cultures. Emphasis is given to the last aspect.

Equivalence of Cross-Cultural Data

Equivalence of compared data is an important premise in any kind of comparative design in psychology. In cross-cultural comparative studies, cultural equivalence (Poortinga, 1989) should be considered in at least three aspects: (1) equivalence of concepts, (2) measurement, and (3) function (Malpass, 1977; Si & Yao, 1999).

By equivalence of concepts, stimulation would be presented to subjects with different cultural backgrounds (the study objective groups) with the same meaning. Most terms used in sport and exercise psychology were developed based on a certain social-cultural background (e.g., the Western achievement circumstance): If these terms refer to the same meaning in participants from alternative cultural backgrounds, it is an essential prerequisite to study the influence of cultures on these dependent variables by comparative design. Mayer (1991), for example, argued that the basic spirit of Chinese exercise Taiji is somehow “an ‘antidote’ to pervasive Western tendencies such as competition, efficiency, goal orientedness, and practicality” (p. 155). Indeed, some concepts in one culture may have no identical psychological or cognitive structure in another social-cultural environment. Thus, it is important to make sure that researchers refer to the same definitions and concepts in various cultural backgrounds before looking for some commonalities or differences.

The equivalence of measurement refers to equal methods and tools in cross-cultural comparative studies. Since paper-and-pencil tools are the most popular approach in cross-cultural psychology studies, methods such as back- translating and bilingual tests have been applied as necessary procedures to achieve equivalence of measurement tools in most cross-cultural sport and exercise psychology studies.

The equivalence of functions is another aspect of equivalence in cross-cultural studies. In this context, it is assumed that people from different cultural backgrounds show almost the same psychological functions when they react to the same question (Si & Yao, 1999). Because of the complex relationship between internal hidden psychology processes and external obvious behaviors, the psychological function of the same behaviors might be different in various cultural backgrounds. Also, different behaviors in different cultures may have the same psychological function to individuals. If psychological functions in different cultural backgrounds are compared through observation of obvious behaviors, objective behavior should be selected and labeled with regard to cultural backgrounds. On the other hand, if same behavioral responses are observed in individuals from different cultural backgrounds, a more in-depth cultural analysis is required before concluding that the same psychological responses and functions are visible across cultures.

Sampling: Cultural and Individual Differences

Another problem with comparability in cross-cultural sport and exercise psychology studies is cultural and individual sample differences. The homogeneity of compared sample groups from different cultural backgrounds was usually not seriously handled or operated by researchers. Some systematic differences which come from institutional and structural difference should be considered and controlled. For example, Kolt et al. (1999) studied participation reasons of gymnastic adolescents and children in Australia, Canada, Israel, India, and China. The sample groups in the first four countries were random selected from the gymnastic clubs that are
open to anyone without entrance qualification. Quite differently, subjects from China were sampled from juvenile sport schools that need considerable entrance qualification in body, skill and commitment. Thus, the meaning of conclusions obtained from this comparison is limited and even questionable.

Essentially, communication between researchers from different cultural backgrounds is considered to be important to achieve better understanding on compared psychological and behavioral phenomena. The comparability is one of the key factors in cross-cultural psychology study design. This asks for more cultural awareness of the researchers in this domain (Boesch, 1991).

**Summary**

As a rapidly growing field in sport psychology, the merits of cross-cultural comparative approach on the development and examination of theory and practice in both sport and psychology domains have been more and more recognized. However, there are still some insufficiencies, especially on methodological issues that need to be considered. Firstly, a lack of theoretically driven research is quite obvious. There is hardly any acknowledged theory to explain and interpret the interactive process of social-cultural background and individual actions (including psychological structure and processes). Secondly, in a review of available studies, especially in sport and exercise psychology, a lack of multidimensional studies using a multimethod approach is obvious. Since the influences of cultural environment on individual actions are mostly in a conjunctive and synthetic way rather than independent isolated ones (Ragin, 1987), it is suggested that, to achieve comprehensive understanding of cultural influence on studied objections, more multidimensional and multimethod designs are required in comparative sport and exercise psychology. The interpretation and re-integration of a huge amount of data obtained from these multiple approaches would depend more on a systematically elaborated theoretical perspective on culture.

Action theory, as a general theoretical background, appears to have exciting potential in this field. According to Boesch (1991),

> Culture is a field of action, whose contents range from objects made and used by human beings to institutions, ideas and myths.

Being an action field, culture offers possibilities of, but by the same token stipulates conditions for, action; it circumscribes goals which can be reached by certain means, but establishes limits, too, for correct, possible and also deviant action. The relationship between the different material as well as ideational contents of the cultural field of action is a systemic one; i.e. transformations in one part of the system can have an impact in any other part. As an action field, culture not only induces and controls action, but is also continuously transformed by it; therefore, culture is as much a process as a structure. (p. 29)

Thus, action (including psychological processes) in certain cultural backgrounds, as well as the commonalities and differences among different cultures, could be well understood with a framework formed by task (goal), environment, and person.

Future research in cross-cultural sport and exercise psychology should focus not only on differences of people’s action in sport and exercise settings among different cultural backgrounds, but also on the similarities appearing across various nations and regions. Besides this, some topics in sport and exercise psychology need more cross-cultural comparative studies, such as emotion presentation and modulation (Hackfort, 1999) in sport and exercise; appraisal and copying style with regard to stress in sports; achievement motivation; relationship between athletic identity (self-image and self concept) and competitive sport as well as exercise participation; and the effect of different exercises (taiji and fitness) in different population with different cultural background. These areas are more easily influenced by social-cultural environments and have more general theoretical meanings. Some other topics (such as drug abuse and career transition processes of elite athletes) might be also suitable to be processed with a cross-cultural comparison for applied purposes.

**References**
