137 - SOCIAL REPRESENTATION OF SWIMMING IN THE INTERGENERATIONAL CONTEXT

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INTRODUCTION

Performance in sports depends on a series of internal factors at different levels that involve the construction and decision of the motor process, through various autonomous situations emphasized during physical training. These act directly and indirectly on the genetic substrate, determining a real result at a given moment, termed by Kiss et al (2004) as Global Condition. It is said that sport talent has great hereditary significance, along with information that the children of high-level athletes receive concerning the sport, which acts as a motivation for practicing the activity in question (Platonov, 2005).

An environment rich in stimulation that enables a variety of physical activities during childhood, favors the development of movements and basic abilities in children. In this sense, their creative and expressive potential will be enhanced in proportion to the stimulation received in this environment (Knackfuss et al, 2004).

Swimming stands out as a sport that offers various aquatic motor experiences which, to a certain extent, favors the development of genetically inherited physical qualities (Bompa, 2002). From the psychological point of view, this activity allows the swimmer to develop persistence and discipline (both in training and health status), directed to the interest and motivation to continue practicing the sport. The family environment may be a facilitating factor for developing sport talent.

Accordingly, the purpose of this study was to analyze the social representation of swimming in the intergenerational context.

METHODOLOGY

This descriptive case study involved a 23 year-old male Brazilian swimmer, 50-meter butterfly record holder, 100-meter world champion in a short course pool, as well as 100 and 200-meter South American and Pan American champion in a short course and long course pool, respectively (considered the third generation in the study).

The protocol chosen to analyze genetic potential by means of collecting fingerprints was the Dermatoglyphic method proposed by Cummins and Midlo (1943).

To analyze the influence of family environment on the history of the sports experiences of their progenitors, we used a semi-structured interview where the data collected were analyzed with the ALCESTE program (in-context lexicographic analysis of a group of text segments), whose objective is, through the quantitative data of these segments, to indicate the possible representations existing in the discourses of the interviewees, organize and describe the verbal data (JODELET, 1989).

The ALCESTE program executes four analysis stages. The first prepares the material for subsequent calculations, recognizing the ICUs (initial context units) and dividing them into text segments (Elementary Context Units-ECU). The second stage is characterized by calculations (chi-square), whose purpose is to classify the simple discourses or the elementary context units in an association test. The third stage processes information on characteristic vocabulary (lexicon) about the elementary context units (ECUs) most representative of this vocabulary. In the fourth and last stage, the program supplies the most characteristic ECUs of each class, producing the context of vocabulary occurrence of each one.

The procedures used in this study respect the international norms of experiments with human beings (Helsinki Declaration) and was approved by the Ethics Committee of the Center for Health Sciences of the Universidade Federal da Paraíba-Brazil (Protocol 189/05).

RESULTS

Dermatoglyphic characteristics (Table 1) of the first generation (grandparents) showed an incidence of W = 0.9 and 8 with high pattern complexity values (D10 = 10, 19 and 18) and STNL = 125,145,153. These results indicate that the paternal grandfather and the grandmothers had a profile predisposed to speed, explosive force, coordination, speed endurance, agility and endurance, respectively. The second generation (parents), despite the higher number of L (7 and 6) D10 (11 and 14) and STNL (139 and 117) respectively, showed a profile of speed, explosive force, coordination, speed endurance and agility. The third generation (athlete) had L=8, D10=10, and STNL=106, showing a profile of speed and explosive force.

Table 1 - Genetic classification between the generations according to genetic markers

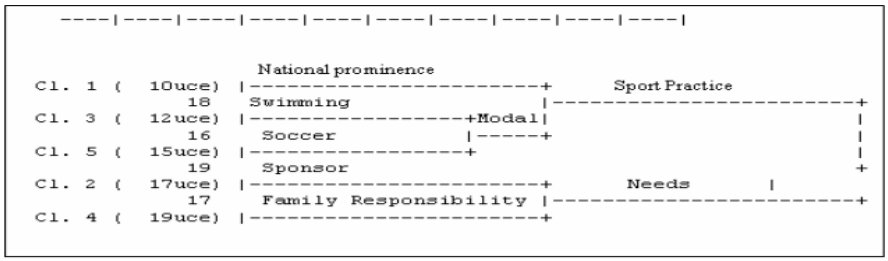
	A	L	W	D10	STNL	Digital Formula	Profile
1st Generation							
Paternal grandfather	0	10	0	10	125	10L	Speed Explosive force
Paternal grandmother	0	1	9	19	145	W>L	Coordination Speed endurance Agility and Endurance
Mathernal grandmother	0	2	8	18	153	W>L	Coordination Speed endurance Agility and Edurance
2nd Generation							
Father	1	7	2	11	139	L>W	Speed Explosive force Coordination Speed endurance Agility
Mother	0	6	4	14	117	L>W	Speed Explosive force Coordination Speed endurance Agility
3rd Generation							
Athlete	1	8	1	10	106	ALW	Speed Explosive force

Data collected by the authors.

The analysis of the social representation of the family members, in relation to the sport activity of the athlete under study, showed interpretations that considered the words of greatest significance and the various contexts in which they are contained (Chart

1).

Chart 1 - Dendrogram of the analysis performed by the ALCESTE program (*in-context lexicographic analysis of a group of text segments*).



Data collected by the authors.

The results show that the last three generations of the family have a strong predisposition to the sport, mainly on the paternal side, in particular that of the parents/grandmothers and parents/son, especially the athlete's father. This strengthens the link of the athletic life of the latter's father (ex-professional soccer player-athlete's grandfather) to his own, as a swimmer and water polo player and to that of his son, a high-performance swimmer.

As to the forms (words) considered by the program as being of significant importance in the discourses presented by the athlete's family, it was observed that the practice of sport requires defining the specific sport to be practiced by the subject, considering that this must be performed at least at the national level. Soccer was widely cited in the discourses presented by the subjects studied, since it was the most promising sport in which this objective could be attained at a determinate phase of the athlete's life.

As a result of this, we can perceive the fundamental importance attributed to family support, and subsequently the need for a private or government sponsor (Classes 2 and 4)

When analyzing the forms in Context 1, the words *year(s)*, *national team*, and *Brazilian*, show the importance attributed by the group to the constant participation in national championships to achieve the previously mentioned goal. The involvement of the nuclear family in pursuit of this objective can be observed by the following discourse (sic): 1st generation- *"I played for the Náutico, Fluminense, and Santa Cruz teams in 1957; I finished 3rd in the Brazilian team championship, which led me to play for Rio de Janeiro, São Paulo, and Pernambuco; At 28, I went to play for Botafogo of Paraíba (paternal grandfather)…"* 2nd generation- *"I started swimming when I was 7 years old; I was champion of Paraíba, north-northeast champion (…) my best finish in a Brazilian championship was 4th place, which put me on the national team, (…)I did a little high board diving and I played water polo, where I had more success than on the national swim team (father). I was on the Olympic gymnastics team of Paraíba from 8 to 17 years of age, more or less (…), and I was always champion and in the student games I finished in 3rd place ( ), but I didn't make the national team (mother)…"*

Contexts 3 and 5, resulting from the sport best suited to the athlete of that generation, show that initially, soccer was the sport that met family expectations of high-level performance; however, this was subsequently substituted by swimming.

In context 2, the words *start* and *team* express the process that led them to play on a team of great importance in their life. We underscore the first contact with the sport, emphasizing the first moments, from the athlete's efficiency to the coaches' reactions.

We also highlight the difficulties they had in their time, contrary to the current opportunities presented to the athlete under study, whose expenses are paid by sponsors (sic): 2nd generation- *"I see my son with much more support than I had in my time; I believe I would have advanced as he has; I was a high school student and I had to work in São Paulo in order to survive, I studied from 07:00h to 13:00h, I worked from 14:00h to 18:00h and trained from 19:00h to 22:00h (father)."*

In context 3, the words *swimming* and *water polo* show the two sports of great importance to this family. Swimming was the sport selected by the paternal grandfather for his son (the father) to practice, since the latter did not have a suitable biotype for soccer; thus, he combined the two sports in water polo. The grandson (athlete in question) was strongly influenced by the father, who at the time was a swimming instructor that took his son to his classes.

In context 4, the words *people, play, parents,* and the phrase *comes from us* were the most cited. In this context we observe the concern of this intergenerational group with the social, people, parents, and collective play, which underscores the socio-affective family aspect involved in sport (sic): 1st generation- *" I had a sport experience even when I was following my son in his youth (paternal grandmother)".* 2nd generation - *"I had no outside friends; they were all within the sport itself; I had no way of having normal friends (…); since we had been athletes, we knew that he had to train every day and that he couldn't miss the practices regardless of school (mother)".* 3rd generation- *"actually when I was little, I liked to play very much; I had a lot of energy, so I grew to like sports (…) today, my parents fulfill this part of the family structure very well. My mother prepares the food that I have to eat and knows my schedule (athlete)".*

In context 5, the words *player, soccer,* and *opportunity* predominate. The emphasis comes mainly from the paternal grandfather and the father, who believed in themselves and became great players in their respective sports (soccer and water polo). They were questioned about the opportunities that they had, that they lost, as well as about what their son (or grandson) is currently achieving as a swimmer (sic): 1st generation- *"I think that what I experienced was great because I try to pass on this sport experience to my children, (…) it was na unforgettable experience (…) (paternal grandfather)".* 3rd generation- *"I've had a lot of opportunities, and my goals in swimming have always been planned. I've managed to fulfill them, except for the Olympic games in Athens, which I was looking forward to; I was very young (…) I believe that my family helped me a lot when I really needed it; when I had to go to Rio de Janeiro in 1999 to swim for the Flamengo Regatas club, they went with me, this helped me a great deal (…); my paternal grandfather was a professional soccer player, my father's brother was a swimmer, my father was a swimmer and water polo player, my mother was a gymnast and her brother was a handball player (athlete)".*

DISCUSSION

The results confirm the influence of social representations in the sport environment. We observe that coordination and speed are genetically inherited both from paternal and maternal lineages, which corroborates the findings of Platonov (2005), where genetic inheritance is intrinsic across generations. We also observed a similarity between the paternal grandfather and the athlete in question, since these abilities did not lose their value across the generations, even with the diversity of genetic predisposition highlighted in the second generation (parents). Thus, in the specific case of swimming, this heredity shows a predisposition for taking part in short distance events, corroborating the phenotype results observed in the records broken in short-pool world championship events in recent years, including a world record in the shortest event in which the athlete in question participated.

Social representations, as collective elaborations, in this case the family, were organized from information that the subjects learned and integrated to their own knowledge (scientific and/or popular), linked to their daily practical experiences in a process of permanent acquisition of social learning (Jodelet, 1989, Accioly et al., 2005). That is, the practice of swimming was constructed over generations when this family perceived that everything started with soccer (paternal grandfather) becoming an amalgamation of soccer and swimming (water polo-father), then floor gymnastics (in which flexibility is one of the main characteristics-mother), culminating in swimming (athlete). It is worth pointing out that sport talent is, in addition to the motor aspects originating from a well elaborated training period, linked to family heredity that builds genetic potential across generations (Fernandes Filho, Carvalho, 1999).

This fact has shown that, in order to form high-performance athletes, one needs to know their family tree at an early age, both their genotype and phenotype (and social) aspects, so that athletes of this level can be prepared.

CONCLUSION

It was concluded that the association between the genetic predispositions inherited from one generation to another is characterized by a profile of speed and explosive force, and the representation of the competitive spirit learned within the family environment contributed to the development of the athlete's talent in swimming. We recommend future studies using an intergenerational anamnesis involving genetic tendency and family history of children and adolescent swimmers in the lower categories, as well as their somatotype characteristics and basic physical qualities in the maturational stages.

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SOCIAL REPRESENTATION OF SWIMMING IN THE INTERGENERATIONAL CONTEXT

ABSTRACT

Over the years Brazilian swimmers have had considerable success in international events, likely as a result of phenotype and genetic situations. The purpose of this descriptive case study was to analyze the genetic potential of a world recorder holder between generations (grandparents n = 3, parents n = 2 and the athlete n = 1), and associate phenotype characteristics through social representations learned in the family environment. As measuring instrument we used the dermatoglyphic method, through fingerprint analysis and a semi-structured interview, whose content was analyzed by the Alceste program. The genetic characteristics show that the 1st generation had a profile of coordination and endurance; the 2nd of speed and endurance and the 3rd of speed. Satisfaction and the possibility of world recognition are representations observed in the family group, which lead us to conclude that talent developed in swimming owes to predisposed generational genetics and to social stimulation experienced within the family.

KEYWORDS: Heredity, Genetic markers, Social environment.

LA REPRÉSENTATION SOCIALE DE LA NATATION DANS LE CONTEXTE INTERGÉNÉRATIONNEL

RÉSUMÉ

Au fil des ans, les nageurs brésiliens ont eu un succès considérable dans les manifestations internationales, probablement à la suite de phénotype et génétiques des situations. Le but de cette étude de cas consiste à analyser le potentiel génétique d'un monde enregistreur titulaire entre les générations (grands-parents n = 3, les parents n = 2 et l'athlète n = 1), et des caractéristiques phénotypiques associés à travers les représentations sociales acquises dans le milieu familiaire. Comme instrument de mesure, nous avons utilisé le dermatoglyphic méthode, par le biais de l'analyse d'empreintes digitales et d'une entrevue semi structurée, dont le contenu a été analysé par le programme Alceste. Les caractéristiques génétiques montrent que la 1ère génération a un profil de la coordination et de l'endurance; La 2éme génération, la vitesse et l'endurance et la 3éme génératio la vitesse. La satisfaction et la possibilité d'une reconnaissance mondiale représentations sont observés dans le groupe familiaire, ce qui nous amène à conclure que le talent développé en natation doit aux générations prédisposition génétique et de stimulation sociale à l'expérience au sein de la famille. MOTS CLÉS: l'hérédité, les marqueurs génétiques, l'environnement social.

REPRESENTACIÓN SOCIAL DE LA NATACIÓN EN EL CONTEXTO INTERGERACIONAL

RESUMEN

La natación brasileña viene destacando a lo largo de los años en campeonatos internacionales, probablemente como resultado de situaciones fenotípicas y genéticas. El objetivo de ese estudio descriptivo, del tipo estudio de caso, fue a analizar el potencial genético de un plusmarquista mundial entre sus generaciones (abuelos n=3, padres n=2 y el atleta n= 1) asociandole las características fenotípicas a través de las representaciones sociales capturadas en el ambiente familiar. Han sido utilizados como Instrumentos de medida el método dermatoglífico, a través del análisis de las impresiones digitales y una entrevista semi-estructurada, cuyo contenido fue analizado por el software Alceste. Las características genéticas comprueban que la 1ª generación presentó un perfil para coordinación y resistencia; la 2ª generación para velocidad resistente y la 3ª generación para velocidad. La satisfacción y la posibilidad de proyección en el mundo deportivo son evidenciadas en el grupo familiar, lo que nos lleva a concluir que el talento desarrollado en la natación es fruto de la predisposición genética generacional y del estímulo social vivido en la familia.

PALABRAS CLAVE: Hereditariedad, Marcas Genéticas, Ambiente Social.

REPRESENTAÇÃO SOCIAL DA NATAÇÃO NO CONTEXTO INTERGERACIONAL

RESUMO

A natação brasileira vem apresentando ao longo dos anos destaques em campeonatos internacionais, provavelmente por conseqüência de situações fenotípicas e genéticas. O objetivo desse estudo descritivo, do tipo estudo de caso, foi analisar o potencial genético de um recordista mundial entre suas gerações (avós n=3, pais n=2 e o atleta n= 1) associando-o as características fenotípicas através das representações sociais apreendidas no ambiente familiar. Foram utilizados como Instrumentos de medida o método dermatoglífico, através da análise das impressões digitais e uma entrevista semi-estruturada, cujo conteúdo foi analisado pelo software Alceste. As características genéticas comprovam que a 1ª geração apresentou um perfil para coordenação e resistência; a 2ª geração para velocidade resistente e a 3ª geração para velocidade. A satisfação e a possibilidade de projeção no mundo esportivo são representações evidenciadas no grupo familiar, o que nos leva a concluir que o talento desenvolvido na natação é fruto da predisposição genética geracional e do estímulo social vivenciado na família.

PALAVRAS-CHAVE: Hereditariedade, Marcas Genéticas, Ambiente Social.