*South African Journal for Research in Sport, Physical Education and Recreation, 2012, 34(2): 173-179.*
*Suid-Afrikaanse Tydskrif vir Navorsing in Sport, Liggaamlike Opvoedkunde en Ontspanning, 2012, 34(2): 173-179.*
*ISBN: 0379-9069*

# BIRTH ORDER AND SPORT PARTICIPATION

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***ABSTRACT***

*The purpose of this study was to determine the relationship between birth order and sport participation in terms of the inherent dangers associated with different sport codes. Data collected from 1310 sport science students over a period of more than 15 years failed to support the popular birth-order hypothesis.*

**Key words:** Birth order; Ordinal position; Dangerous sports; Sport socialisation.

## INTRODUCTION

Much of the appeal of studying birth order (ordinal position) stems from the common belief that children, occupying different positions in the sibling order, experience different socialisation environments (Ebihara *et al*., 1983; Daniels & Plomin, 1985). The child's interactions with parents and siblings are mediated by ordinal position (Soetevent & Kooreman, 2005). For example, first-borns tend to receive more parental attention with regard to support and control (Lewis & Kreitzberg, 1979). Later-born children, on the other hand, experience more interaction at sibling level, receive less attention from parents and tend to have a tougher time asserting themselves in a family set up (Seff *et al*., 1992). These tendencies are affected by factors, such as the family size, the gender composition of the siblings and the spacing between ordinal positions (Blake *et al*., 1991).

One of the areas of interest with regard to birth order is that of risk-taking behaviour and participation in dangerous sports (Seff *et al*., 1992). Despite some contrary findings (Eisenman, 1987; Seff *et al*., 1992), empirical evidence suggests that first-born children are under-represented in dangerous sports. According to Longstreth (1970), first-borns tend to experience greater fear and tend to avoid situations that can lead to physical harm. Flowers and Brown (2002) found that first-born athletes recorded significantly higher cognitive and somatic state-anxiety as compared to later-born athletes. In a survey of 166 male university students, Yiannakas (1976) found that first-borns avoided sport where the probability of physical injury was high. Casher (1977) in a study of 127 university athletes concluded that the proportion of participants in dangerous sports increased with ordinal position. No evidence of research on the relationship between birth order and sport participation in South Africa could be found.

## RESEARCH HYPOTHESES

The main hypothesis of this investigation was that there is a relationship between birth-order and participation in dangerous sports.

## METHOD

### Sample

Data were collected from physical education/sport science students (N=1310) from Stellenbosch University (South Africa) over a period of more than 15 years.

### Data collection

The information pertaining to this survey formed part of the customary biographical data collection from students at the beginning of a semester course in sport psychology. In addition to biographical information, students were requested to state their favourite sport in which they were participating at the time of the survey. They also had to provide information about the number of siblings and their ordinal position within their families.

### Ethical issues

Over the major part of the duration of the data collection there were no formal official procedures at the university regarding the ethical issues of research. However, such issues were considered in the present study. The author who was the lecturer for this particular sport psychology course collected the data personally. The students were not informed of the purpose of the study (to determine whether there is a relationship between birth order and sport participation). As some respondents may have perceived the requested information to be of a sensitive and personal nature (family size), it was stressed that participation in the survey was voluntary and that the information of individuals would be treated confidentially. Not a single student withheld the requested information.

### Danger index

No objective formulation of the criteria used to define "dangerous" sports could be found in the literature on this topic. For the purpose of the current study a *danger index* was constructed for 57 sport codes. A total of 192 final-year and post-graduate sport science students were asked to rate each of the sport codes by answering the question: "How dangerous are the following sports?" The following guideline was provided:"*Dangerous* refers to the potential physical harm or injury that the participant may experience when competing".

Responses were recorded on a 7-point Likert scale ranging from (1) *Safe* to (7) *Dangerous.* Albeit a crude form of classification, it does utilise the opinions of a fairly large sample of students in the field of sport and therefore the survey does not rely exclusively on the intuitive perception of a few individuals.

## RESULTS

### Family composition

The respondents in the sample came from fairly large families ranging from 1 to 8 siblings. The median family size was 3 siblings (Mean=2.75). Only 5% of the respondents were the

only child in the family. Eighty-five per cent (85%) of the respondents were from 2- or 3-sibling families. The percentage of first-born siblings in the sample was 38.5%. A fair proportion (51%) of the male respondents grew up with an older brother in the family. In the case of female respondents, 19% had older brothers. This phenomenon could have had an effect on their sport socialisation.

**Sport preferences**

The sample of sport science students at this particular university participated in a variety (57) of sport codes of which rugby was the most popular (Table 1).

*TABLE 1*: **TEN MOST PREFERED SPORTS OF SAMPLE OF SPORT SCIENCE STUDENTS**

| Sport | n | % |
|---|---|---|
| Rugby | 239 | 18.2 |
| Field hockey | 204 | 15.6 |
| Track and field | 148 | 11.3 |
| Netball | 113 | 8.6 |
| Cricket | 80 | 6.1 |
| Competitive swimming | 71 | 5.4 |
| Tennis | 56 | 4.3 |
| Water polo | 48 | 3.7 |
| Gymnastics | 46 | 3.5 |
| "Cross country running" | 35 | 2.7 |

**Danger index**

*TABLE 2*: **TEN MOST DANGEROUS SPORTS** [a]

| Sport | Mean | SD |
|---|---|---|
| Rugby | 5.70 | 0.95 |
| Para gliding | 5.60 | 1.36 |
| Rock climbing | 5.59 | 1.18 |
| Surf life saving | 5.27 | 1.34 |
| Mountain biking | 5.24 | 1.15 |
| Wrestling | 4.98 | 1.17 |
| Scuba diving | 4.95 | 1.55 |
| Kick boxing | 4.82 | 1.49 |
| Pole vaulting | 4.77 | 1.24 |
| Field hockey | 4.69 | 1.23 |

[a] Rated on a 7-point scale

*TABLE 3*: **TEN SAFEST SPORTS** [a]

| Sport | Mean | SD |
|---|---|---|
| Table tennis | 1.53 | 0.86 |
| Golf | 1.59 | 0.85 |
| Drum majorettes | 1.71 | 1.11 |
| Badminton | 1.77 | 0.75 |
| Tennis | 1.48 | 0.79 |
| Synchronised swimming | 1.92 | 1.03 |
| Competitive swimming | 1.96 | 1.03 |
| Competitive dancing | 1.99 | 1.04 |
| Shooting | 2.37 | 1.56 |
| "Cross country running" | 2.39 | 1.04 |

[a] Rated on a 7-point scale

Tables 2 presents the 10 most dangerous sports and Table 3 covers the 10 safest sports. Rugby was rated as the most dangerous sport [5.7 on the 7-point Likert scale]. Table tennis was considered the safest sport with a rating of 1.18. As not a single subject in the sample participated in boxing, it was unfortunately omitted from the questionnaire. It is assumed that it would normally feature in the top 10 most dangerous sports.

**Relationship between sport danger index and birth order**

No significant correlation (Spearman r=0.01; p=0.68) was found between birth order and the sport danger index. The data were subjected to an additional statistical approach. The subjects were divided into 2 groups: those who participated in the top 10 dangerous sports (n=489) and those who participated in the 10 less dangerous sports (n=332).

The mean ordinal order for the dangerous group was 1.9 and for the less dangerous group 1.8. The statistical analysis, F (1, 819) p=0.31 and Mann-Whitney U, p=0.32, again failed to support the birth-order/sport-preference relationship. This finding is contrary to general belief and expectations, as well as other findings of empirical research. This prompted further analysis of the data of some sport codes.

Closer inspection of the respondents who played rugby (perceived as the most dangerous sport) indicated that 46% of the players were first born. In the case of the safer sports such as tennis and competitive swimming the percentage of first-born participants was 58% and 51% respectively. These findings will be discussed later, but at this stage it can be concluded that this does not support the generally accepted belief about the relationship between birth order and sport-preference.

## DISCUSSION

### Family composition

The respondents came from fairly large families. Only one out of every 20 of the sport science students was the only child in the family. It is assumed that larger families or the availability of playmates would have a positive effect on a child's participation in games and sport. The presence of an older brother in the family (51% for males and 19% for females) could have had an influence on the sport socialisation of the sample of sport science students. The fairly large percentage (38.5%) of first-born siblings in the sample is somewhat unexpected, especially if one assumes that ordinal family position (later-born) makes serious sportspersons different from their non-participant peers.

### Sport preferences of sport science students

The respondents participated in a variety (57) of sport codes. It would have been interesting to determine if the participation patterns changed over the years with changes in the demographics of the university and other societal changes. Unfortunately no provision (date of completion of the questionnaire) was made for this type of analysis when the research was initiated.

### Relationship between sport danger index and birth order

The data provided no support for the belief in the relationship between birth order and sport participation. This prompted further analysis of the data of some sport codes. Closer inspection of the respondents who played rugby (perceived as the most dangerous sport) indicated that a large percentage (46%) were first-born players. This finding does not support the generally accepted hypothesis that the more dangerous sports are the domain of later-born participants. The latter could not be regarded as over-represented in the group of rugby players in the current sample.

In the case of the safer sports the birth-order/sport-preference relationship would predict an over-representation of first-born participants. The percentages first born participants in this group of tennis players (58%) and competitive swimmers (51%) are not large enough to be regarded as an over-representation of first-borns in safer sports.

The lack of evidence supporting the popular belief in the relationship between birth order and sport participation may be the result of the nature of the sample used in this research. It is possible that the sample of sport science students is not representative of the larger population.

## CONCLUSION

Considerable attention has been given to the socialisation of children into sport. Apart from personal attributes, the influence of others (parents and siblings) plays a role in this process (Ebihara *et al*., 1983). The interaction patterns in the family as the primary socialising agency are reflected in the secondary social systems, for example, sport (Frey & Eitzen, 1991). This supports the findings of others on this topic (Longstreth, 1970; Yiannakas, 1976; Casher,

1977; Rees *et al*., 2008).

The effect of birth order is not a simple issue. In addition to other factors in the family, it is assumed that there are some complicated networks at different birth-order positions that influence socialisation into sport for both sexes (Ebihara *et al*., 1983). For example, if the gap between siblings is large, a later-born child might demonstrate the characteristics of a first-born sibling. Gender considerations add to the complexity of birth-order interactions. For example, if the first child is a girl followed by a later-born boy, the latter may exhibit the traits of a first-born male.

It could be surmised that in some instances participation in specific sports is mediated by socio-cultural factors that override the influence of birth order. This might have been the case with the nature of the current sample. Birth order continues to be a frustrating variable in the study of socialisation (Seff *et al*., 1992). Kluger (2007) observes in *Time* that the vocal detractors of birth-order research, question the findings of the science less than the methods that lead to nothing more than "interesting junk". However, he continues:

> "Millenniums of families would swear by the power of birth order to shape the adults we eventually become. Science may yet overturn the whole theory, but for now, the smart money says otherwise" (p. 34).

A more pessimistic view is that the birth-order effect is a myth. After an extensive review of literature and conducting their own empirical research with a large sample of 6215 Swiss males, Ernst and Angst (1983) concluded that birth-order research is futile.

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*(Subject Editor: Prof. Ben Steyn)*