CHAPTER 6

CONCLUSION

Chapter 6 draws conclusions about the results obtained and discussed in the two preceding chapters. It is argued that although the factors highlighted above are valuable when comparing triathletes with their single sport counterparts, no single variable differentiates a triathlete from a runner, swimmer or cyclist although they are most similar to cyclists. On the contrary, however, triathletes seem to possess a blend of the characteristics that make single sport athletes successful.

The physical and physiological demands of sequential exercise in swimming, cycling and running are unique and require the triathlete to develop physical and physiological characteristics that are a combination of those seen in specialist endurance swimmers, cyclists and runners.

It is considered valuable to identify any physical or physiological characteristics that might be advantageous to the sport of triathlon. This study therefore measured a number of physical and physiological variables deemed to be important for success in endurance events. The study found that in terms of the physical characteristics measured namely age, mass, height, % body fat and lean body mass triathletes were not different from any of the single sport athletes.
In terms of the anthropometric measurements namely skinfolds, bone widths and girths, triathletes were again no different to the single sport athletes. When plotted on a somatochart, it is clearly evident that although triathletes, swimmers and cyclists fall into the same category of being ectomorphic-mesomorph, runners on the other hand are defined as mesomorphic-ectomorph.

The single sport athletes and the triathletes in this study have a very similar physiological make up. Their VO_{2max} and running economy are not significantly different.

In the test of muscle strength and endurance on an isokinetic dynamometer, the triathletes were once again no different from the runners, swimmers and cyclists.

What we conclude from the above-mentioned findings is that although triathletes are most similar to cyclists, they possess a blend of the characteristics that make the single sport athletes successful. There is no one single variable that differentiates a triathlete from the single sport athletes as is the case when comparing distance runners with swimmers. In this study for example, swimmers and runners are generally at the two extremes of each variable (body mass, lean body mass and VO_{2max} being significantly different), with triathletes (and cyclists) lying between them. This therefore confirms that triathletes possess a combination of the characteristics that are advantageous to the discipline.
In summary, triathletes are generally tall, of average to light weight and have low levels of percentage body fat with a high lean body mass. They possess a relatively high VO$_{2\text{max}}$ and have a favourable running economy. They have a physique characterised by slenderness and a predominance of muscle. The sport of triathlon is growing in popularity and possibly the profile outlined above may be an aid in identifying and training successful triathletes.

6.1 Limitations of this Study

Perhaps the greatest limitation of this study was the small sample sizes used, especially those of runners, cyclists and swimmers. The number of triathletes tested (n=12) is however comparable to sample sizes of the previous studies listed in Table 12. Every attempt was made to recruit suitable candidates for the study in order to have larger sample sizes, however the number of candidates that met the requirements and the response was less than expected.

An information sheet for prospective volunteers (Appendix B) was handed out at various road races in and around Johannesburg, as well as at swimming clubs and various cycling shops. Cycling clubs were contacted and informed of the study and I visited the largest triathlon club in Pretoria and encouraged their participation in this study.

The nature of the testing required athletes to make themselves available on three separate days and because of this commitment, some athletes did not
complete all three days of testing and their results could not be included. Limited resources as well as the nature of the testing excluded the participation of elite athletes from other provinces.

Testing was carried out in 1993 and at the time triathletes in this study were all top ten finishers in recognised South African triathlons of various distances. The two long distance triathlons in South Africa at the time namely the Durban Ultra and South African IronMan, were not yet part of the World IronMan series and were not raced over the same distances. It is therefore not appropriate to compare finishing times of these South African athletes with times recorded for International elite triathletes competing in events that form part of the World IronMan series.

While the minimum recruitment criteria for this study may not have defined the athletes as being elite according to current world standards, the triathletes in this study were considered “elite” because of their top ten finishing positions and not because of the times set out as minimum criteria for recruitment in this study. Two of the runners in this study were gold medallists at both the Comrades and Two Oceans Ultra Marathons and the swimmers were all provincial level competitors with two competing at national level. All the cyclists in the study conformed to my classification of being elite, namely completing 50km in less than 75 minutes, a criterion that would still gain a cyclist entrance to the group recognised as elite.

Now that the South African IronMan Triathlon has become part of the World IronMan Series and the Olympic distance Triathlon has been included in the
Olympic Program, it has made it easier to define elite South African triathletes by their finishing times and their ITU ranking.

6.2 Future Recommendations

- The criteria defining elite athletes should be determined according to international standards.
- Elite South African athletes should ideally be recruited from the entire country in order to achieve larger sample sizes.
- It would be advisable to differentiate between Olympic distance triathletes and IronMan distance triathletes as their profiles may indeed be different. As a result of the growth in the sport of triathlon over the last decade and its recent inclusion in the Olympic Program, each of these distances have become specialist events.
- It would be interesting to compare elite South African triathletes as defined by the ITU criteria with those in the present study.