The athletic performance development model, known as the **Long Term Athlete Development model** was [and continues to be] developed by Istvan Balyi from 1990 to the present day. The LTAD has developed from five stages in 2001 to six stages in 2004.

Developed from a **periodisation model** in the performance of Alpine Skiers over an eight year cycle (two Olympiad macro-cycle), its so called principles through various incarnations and despite little theoretical development of the original ideas have, in Britain at least, become seemingly accepted as scientific fact to sport policy makers and sport development professionals alike.

The Long Term Athlete Development model, know as the LTAD, has been described as the “Golden Thread” that permeates the 2004 National Framework for Sport, it appeared as the preferred model (well only model actually) in the Governments (2002) **Game Plan** National Sports Policy document.
It could be argued that the ‘principles’ of LTAD have driven the “multi-sport” hub development for Big Lottery funding of new projects, Multi-sport coaches initiatives in county sports partnerships and is a requirement of “whole sport plans” - “one stop plans” for governing bodies. The LTAD is now delivered by Sports Coach UK in a variety of modules all across the country - and they actually charge money for it !. We also understand that some NGB’s are charging up to £100 for coaches to listen to presentations on the LTAD. The adoption of the LTAD in British Sports Policy is, in our opinion particularly misguided given the lack of proper research evidence [well any actually], moreover, changes made to NGB development programmes on the basis of the LTAD [some think] are potentially detrimental to the development of young talent. Some think it has nothing to do with elitist sport reframing it as an athlete retention model.

“Not only does LTAD not work, there’s no evidence for it. It really ticks me off. Funding claims need to be based on some evidence. We need to be in a position where our research is as evidence-based as our medical colleagues .”

Professor Dave Collins. ( Sept 2009 )

Scientific interrogation of the model remains impossible since the LTAD refers to virtually NO science and includes no research data, just a few examples of people who might fit the idea..... good science is reviewed by respected scientists [peers] the results published in proper [peer reviewed] journals - ie. the science is verified as far as it can be!, support for the LTAD model appears [from 1990 to 2009], in NO academic journals in seminal form - there is a reason for this! - It could be argued that the LTAD in Coaching Science is particularly suspect; here are perhaps some of the reasons why;

The LTAD, a specific sport training model based on periodisation has developed into a “sports wide” set of principles that now permeate British Sports development, on the basis of Balyi’s statement(1990) that; “The principles outlined in this article [ 1990 ] constitute the basic elements of the Canadian Men's Alpine Ski team program for the 1988,1992, and 1994 Winter Olympics. However, this does not mean that these principles can't be applied to a wider segment of the population.” (Balyi, 1990)
Despite providing no evidence for this generalisation statement in Balyi’s 2001 LTAD version published in the “Coaches Report: Vol 8” in British Columbia, Balyi refines his ideas to encompass even more sports by dropping that cornerstone of periodisation of a period of generalised training for certain sports, without providing a rationale or evidence for such a redefinition (based on theoretical development) by stating:

“In principle, sports can be classified as either early specialisation or late specialization sports (Balyi and Hamilton, 1999). Early specialization refers to the fact that some sports, such as gymnastics, rhythmic gymnastics, figure skating, diving and table tennis require early sport-specific specialization in training.

Late specialization sports, such as athletics, combative sports, cycling, racquet sports, rowing and all team sports require a generalized approach to early training. In these sports, the emphasis of training should be on the development of general, fundamental motor and technical-tactical skills. Reviewing the existing literature helped us to conclude that early specialization sports require a four-stage model, while late specialization sports require a five-stage model” (Balyi 2001)

This development of the model, which was (interestingly) officially ‘trademarked’ by Balyi in a variety of countries, coinciding with a few professional tours as a consultant - including the UK, was further developed in a 2004 LTAD version to include a now well used quotation (extending from that stated in Balyi’s original work (6 to 8 years)) from Nobel laureate, Herbert Simon that; "It takes 10 years of extensive training to excel in anything".

In point of fact the LTAD, whilst published widely in Coaching magazines, cannot be found in its seminal form in “peer reviewed” academic journals. There are (to our knowledge) no longitudinal studies, nor any meaningful positive research findings with respect to the LTAD, not even a retrospective studies of Olympians and what they experienced to get to elite level based on the principles suggested by the Long Term Athlete Development model.
The LTAD is a ‘periodisation’ model, directed at producing high performance. In his 1990 publication Balyi makes this explicit. Given the lack of research and testing of the model [or the 1990 work from which it has developed] from the knowledge domains Balyi claims to draw from, those of exercise physiology, biomechanics, nutrition, motor learning and developmental psychology, some of which have incompatible domain assumptions, we leave the reader to consider the validity and reliability of the “principles” of the LTAD, particularly in terms of construct validity.

As for the policy makers, we imagine that the LTAD provides a convenient and intuitively attractive model and we understand that there will be reluctance for an evidence base to get in the way of what seems to be a nice idea. This despite the insistence on evidence based research in other areas of sport development.

National governing bodies appear reluctant to discuss with their constituents the incorporation of the LTAD ‘principles’ in their educational or performance pathways. This is probably because LTAD incorporation was a condition of "whole sport plan" submissions, the precursor to NGB funding and lottery distribution conditions. LTAD, or something that sounds like it, is indeed a facet of whole sport plans and many Governing bodies have written up LTAD in ways that suit the sport; many sound like, but in fact are nothing like, Balyi’s LTAD, each examples of what we might describe as strategic rhetoric, ie. uses the words, means completely different things, but sounds a bit like, Balyi's LTAD.

Perhaps people have noticed that Sport England are no longer providing Balyi seminars...... some problems with research evidence we understand......

Given the Balyi publications it is clear that the LTAD has been developed as an elitist model - talent development - made explicit by Balyi’s 1990 offering. Chris Earle, Director of Sports Development at Loughborough University suggests that the Balyi model is NOT an elitist model, rather it is an athlete retention model; giving it a new name of Long term athlete participation [LTAP]. Earle’s interpretation, whilst (also) providing little in the way of research evidence for this reframing of Balyi’s model, also undermines Balyi’s 2004 suggestion that in early
specialisation sports the “FUNdamental” stage may be dropped - Earle, on the other hand, stating that passage through the “FUNdamental” stage is vital!

Given the above, Earle’s presentation provides mixed messages about the LTAD. It directly contradicts Balyi’s 1990 periodisation model [high performance] and also Balyi’s 2004 Early specialisation sport model in terms of the “FUNdamentals” (the generalised period of training, in Bompa’s periodisation language)

Chris Earle, Director of Loughborough Sport, by inference says (explicitly by saying that the LTAD is not an elitist [high performance] model) that the LTAD lacks both internal and external validity - it does not do what it says it does, develop elite high performance athletes - rather he suggests that it provides a model to retain people in sport, reframing it as the LTAP! Long term athlete “participation”(and - consistent with Balyi- provides no research evidence to support this!)

The reader may be left with some questions; is it performance development, is it retention of people in participation sport and is there any research evidence to support either?

Students should develop their critiques of this model by drilling down to the academic domains upon which the LTAD claims to be founded in, your starting point is the “select bibliographies” in the various LTAD incarnations..... if you find some scientific evidence for LTAD please let us know........interrogation of the “scientific underpinning” [or lack thereof] of the LTAD would make a fine dissertation!

Students should note that this rough guide is just that, a rough guide to our perception of the LTAD and in common with that model it has not been peer reviewed in an academic sense and should therefore be treated with similar caution. Trademarks and copyrights are recognised as being owned by Balyi, and Balyi and Hamilton where appropriate
A final note: All things considered, it remains our opinion that the LTAD is one of sports’ examples of objectification [the act of representing an abstraction as a physical thing]; in as much as if you print something enough times and in enough places; it becomes accepted as fact. Clearly however, that doesn’t make it fact!

Student Projects.......

The Long Term Athlete Development programme (LTAD), is a fantastic opportunity for students to develop their analytical and critical evaluation skills.

University assessment questions in this area are often set to avail students of “driving a coach and horses” through this particular model and by extension allowing students the confidence to critique “a model accepted in sports policy” that has little basis in terms of the science that underpins it. (for students it’s a gift!)

Students should start with the original periodisation model in 1990, by doing so the weaknesses in terms of generalisations may be revealed. Drill down to the actual claims in science and follow the references (remember that coaching magazines are not peer reviewed journals). Then you may like to look at how the model has developed in 2001, then in 2004 and remember that the science has not changed! Just because governing bodies “say” they are working in it’s framework, does not actually mean they are. There are many high performance coaches who might question the LTAD and with no journal publications and no evidence it’s possibly not surprising! There is however a growing body of ‘proper’ research that challenges the efficacy of Balyi’s model.

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Addendum: September 2012.
Now then and after 10 years on the site we have had nobody challenge the informed critique above; despite it being viewed over a million times. Our own research (albeit undergraduate and postgraduate in UK Universities – some 67 studies in 17 sports) demonstrates that there is no evidence in support of the LTAD in a performance sense.

In the last ten years all – yes ALL – peer reviewed journal articles find no support for the LTAD. The LTAD remains however as part of British (and others’) whole sport plans in order to secure funding. Fortunately however many governing bodies have used the words but have shaped their talent development models very differently. This process is called strategic rhetoric.

Whilst Sport England (and others) previously touted Balyi’s model, any mention these days sends them running for cover; academics can’t be bothered since there are no sensible places to start with such an hypothesis; what remains is an elongated periodization premise that has no support in practice and the embarrassment that sport in the UK was naïve enough to be hoodwinked by such a fanciful idea.

Using this model as part of sports development policy at community level will become an obvious nonsense when you interrogate the science that underpins it, the term in research is that the model - given it’s applications, lacks “construct validity”. We can explain it, but can you? If you can, you’ll probably get a first.....

Your journey may well be assisted by looking at the 2004 academic review of Talent identification and development from the University of Edinburgh, and the 2010 academic review from Sports Coach UK; Participant development in Sport.