TALENT IDENTIFICATION AND DEVELOPMENT THROUGHOUT THE ATHLETE PATHWAY
TALENT IS THE MOST IMPORTANT CONCEPT IN HIGH PERFORMANCE SPORT TODAY.
An innate quality (or qualities) that identified at one point in time can be used to predict success at a future point in time.
TALENT IDENTIFICATION
The process of identifying athletes with this quality is termed *talent identification*. Assumes:
The process of identifying athletes with this quality is termed *talent identification*. Assumes: talent is real.
The process of identifying athletes with this quality is termed *talent identification*. Assumes: talent is real and that it can be measured.
The process of helping these athletes train, practice and succeed is termed talent development.
Why does this matter?
UK spent ~20 million pounds (~$33 million CAN) for London Games

High school - ~ 18,000 schools = 540,000 players

DIV 1 – 346 teams = ~4500 players

NBA draft – 2 rounds ~ 50 college players

15-20 go on to NBA
SYSTEMATIC REVIEW

Robinson, Wattie, Schorer & Baker (under review)

» Search terms “talent”, “expertise”, “giftedness”, AND “sport”

» Web of Science, Sport Discus

» Timeframe 1990-2015

» 1696 articles
SYSTEMATIC REVIEW

Robinson, Wattie, Schorer & Baker (under review)

» 20 studies
  – Prospective (1 year) with skill-based comparisons

» Recent (all published since 2004)

» 65% males only, mostly from soccer (n=7) followed by rugby league (n=3), gymnastics (n=3); largely from Europe (n=16)

» Mostly physical variables (n=12) with only 4 considering a mix of variables
PROSPECTIVE STUDIES OF TALENT ID

Koz, Fraser-Thomas & Baker (2011)

- Considered accuracy of professional sports drafts (NHL, NFL, NBA and MLB) in predicting future performance
- Results = very poor accuracy (ranging from 3% to 17% variance accounted for in MLB and NBA respectively)
PROSPECTIVE STUDIES OF TALENT ID

Schorer, Rienhoff, Fischer & Baker (under review)

– Considered accuracy of coaching talent selections by tracking where selected and rejected players end up.
– N = 58 German handball players measured in 2001 at age 13-14
– Assessed by national and regional coaches
– 10 yrs later - 14 were National team members
PROSPECTIVE STUDIES OF TALENT ID

Schorer, Rienhoff, Fischer & Baker (under review)

– *A priori* probability = 76% (everyone forecasted as untalented)

– Accuracy ranged from 79% for National level coaches to 75% for regional level coaches with similar rates of Type I and Type II errors

– Interestingly, randomly chosen novices had an accuracy rate of 73% but were more likely to make Type II errors
Talent Identification and Development
BELIEFS ABOUT TALENT MATTER!

How do you explain/attribute your capabilities?

– Beliefs about talent and its development affect motivation, learning and performance

Fixed/Implicit = natural ability, nature over nurture,
Growth/Acquirable = hard work, nurture over nature
BELIEFS ABOUT TALENT MATTER!

How do you explain/attribute your capabilities?

– Beliefs about talent and its development affect motivation, learning and performance

Fixed/Inherent mindsets are associated with:
Decreased motivation, less practice, learned helplessness
‘TALENT’ IS THE MOST IMPORTANT CONCEPT IN HIGH PERFORMANCE SPORT TODAY.

Systems are still designed with this concept as the foundation

Funding is based on the assumption that talent is real and coaches can/should identify it

This approach has high costs re: early de-selection and dropout
KEY MESSAGES

1. Forget about talent
   – If it exists, we don’t know how to measure it.

2. Your messages about talent may be harmful
   – Foster a growth mindset but be realistic

3. Focus on quality of training/practice
   – This is where your greatest impact will be
Thank You!

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TALENT IDENTIFICATION AND DEVELOPMENT THROUGHOUT THE ATHLETE PATHWAY – PART 2
WHO AM I?

QUICK RELEVANT HISTORY

» 2003 U Alberta Novice
» 2006 Commonwealth Regatta and World University Rowing
» 2006 MSc. Victoria (Rowing & Taper & Blood) - Rower
» 2008 Canadian Sport Institute Pacific – Physiologist – Rowing
» 2013 UBC Sr. Manager Sport Science and Sport Medicine
OUTLINE
TALENT ID / TALENT TRANSFER

60 Women

67 Men
NOVICE ROWING

TEST BATTERY – DAY 1

» Athletic history
» Anthropometrics
  – Height
  – Weight
  – Wingspan
» Erg Peak Power
» 2km run
  – Aerobic competency
  – grit

23 Women
25 Men
ANTHROPOMETRICS

Women

- Height: 179 cm
- Weight (lbs): 169
- Wing Span (cm): 210

* Height: 191 cm

Men

- Height (cm): 190
- Weight (lbs): 182
- Wing Span (cm): 207

* Height: 194 cm

* Weight (lbs): 162

* Wing Span (cm): 210
NOVICE TESTING

PHYSICAL TESTING

<table>
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<th></th>
<th>Run Time</th>
<th>PP (Watts)</th>
<th>Schwinn</th>
<th>500m Erg (Watts)</th>
<th>2k Run (Sec)</th>
<th>PP (Watts)</th>
<th>Schwinn</th>
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<td>Men</td>
<td>715</td>
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<td>81</td>
<td>480</td>
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<tr>
<td>Men</td>
<td>376</td>
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</table>

* Indicates significant difference.
TALENT ID / TALENT TRANSFER

2016/2017

60 Women
23 Women
16 Women

67 Men
25 Men
7 Novice
7 Varsity

Exams, wake-ups, Christmas, injury, etc.
UBC NOVICE PATHWAY INVESTIGATION

NOVICE YEARS 2008-2016

» 1. UBC Novice (at end of novice season)
» 2. UBC Varsity Development (on team, but not CURC Crew)
» 3. UBC Varsity (CURC Crew)
» 4. Canadian Development Team (U23)
» 5. Sr. National Team
WOMEN’S NOVICE PATHWAY

STARTED IN OR AFTER 2008-2016

- 64 Novice
- 16 CURC (25%)
- Canadian Dev. (5%)
- Sr. Team (1.6%)
MEN’S NOVICE PATHWAY

STARTED IN OR AFTER 2008

72 Novice

Canadian Dev.
1.4%

Sr. Team
1.4%

9 CURC
13%

Presentation Title
2015-01-08
UBC TO NATIONAL TEAM

UBC NOVICE PATHWAY

TEAM PATHWAY
PATHWAY PROGRESSION

Men's Conversion

Women's Team Conversion

Sr. Nat.
U23/ Dev
CU's Team
Team
Novice


ATHLETE DEVELOPMENT

HIGH PERFORMERS

Men 2000m Erg Test

Days in database

Average Power (Watts)

300 350 400 450 500 550

0 1000 2000

Men 6000m Erg Test

Days in Database

Average Power (Watts)

300 350 400 450 500 450

0 1000 2000
ATHLETE DEVELOPMENT

HIGH PERFORMERS

Peak Power

Days in Database

Power (watts)

Average Power (watts)

Days in database

1 Minute - Avg Watts
WHAT IS TYPICAL DEVELOPMENT?

WOMEN’S TEAM VS RCA DEVELOPMENT PATHWAY
### Female Rowers' Improvement

#### Overal
- Peak Power: 5.54%
- 1-Minute: 3.37%
- 2000-Metres: 2.00%
- 6000-Metres: 1.91%

#### 1st-2nd
- Peak Power: 5.45%
- 1-Minute: -1.50%
- 2000-Metres: 1.07%
- 6000-Metres: 1.17%

#### Top Quartile
- Peak Power: 10.12%
- 1-Minute: 11.25%
- 2000-Metres: 4.76%
- 6000-Metres: 3.82%

---

**Presentation Title**

**2015-01-08**
WHAT IS TYPICAL DEVELOPMENT?

UBC MEN

Male Rowers' Improvement

<table>
<thead>
<tr>
<th></th>
<th>Peak Power</th>
<th>1-Minute</th>
<th>2000-Metres</th>
<th>6000-Metres</th>
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<tbody>
<tr>
<td>Overall</td>
<td>12.14%</td>
<td>34.92%</td>
<td>5.45%</td>
<td>4.19%</td>
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<tr>
<td>1st-2nd</td>
<td>0.87%</td>
<td>6.06%</td>
<td>1.47%</td>
<td>1.88%</td>
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<tr>
<td>Top Quartile</td>
<td>14.53%</td>
<td>61.07%</td>
<td>7.40%</td>
<td>7.30%</td>
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</tbody>
</table>
SUPPORTIVE TRAINING ENVIRONMENT

Cost

Higher

Training To Win
Training To Compete

Athlete Level (LTAD)

“TOP-SECRET”

PLUG N’ PLAY
(e.g. ergogenic supplements, heat acclimation, etc)

BASICS
(e.g. training stimulus, lifestyle habits, monitoring, routine test sets, paramedical, blood monitoring, positive and healthy training daily training environment, proper strength program etc.)
» Databasing: Excel Tricks for Sports -
» https://www.youtube.com/user/ExcelTricksforSports


THANK YOU

Mike Pearce

Craig Pond

Zoe Fettig Winn

Tristan Howarth

Date: 2015-01-08
TALENT IDENTIFICATION AND DEVELOPMENT THROUGHOUT THE ATHLETE DEVELOPMENT PATHWAY
WHY TALENT IDENTIFICATION AND DEVELOPMENT?

» Funding is based predominantly on Olympic Gold Medal performance
» Performances are always improving each Olympiad
» Plan for future performance: TID can identify and nurture talent for the future
Cambridge/Oxford Boat Race 1829-2005

Year

Weight (kg)

Winning time
<table>
<thead>
<tr>
<th>TIME</th>
<th>NAME</th>
<th>YEAR</th>
<th>HEIGHT</th>
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<td>9.95</td>
<td>Jim Hines</td>
<td>1968</td>
<td>184</td>
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<td>9.93</td>
<td>Calvin Smith</td>
<td>1983</td>
<td>186</td>
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<td>9.92</td>
<td>Carl Lewis</td>
<td>1988</td>
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<td>1991</td>
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<td>Maurice Greene</td>
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<td>9.58</td>
<td>Usain Bolt</td>
<td>2009</td>
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PRACTICAL ILLUSTRATION: WHAT IS TALENT ID?

» How do you use your human resources
» What athletes are directed to your best coach
DEVELOPING TID TESTS (A.I.S. CANBERRA)

EXTENSIVE STUDIES OVER 5 YEARS PRODUCED ACCURATE RESULTS

» Comparison tests between winning and less successful athletes

» Initial use of laboratory tests indicated significant differences

» Development of field tests produced the same result – but with more portable and flexible equipment to take into schools

» All tests had minimal skill or pacing requirements

» No rowing specific tests were used
TEST ATHLETES

ANTHROPOMETRICS
Height | Arm span | Weight

STRENGTH: C2 DYNOMETER
Measure: “WORK” Nm – [Force x Distance]

ENDURANCE: Schwinn Arm Leg Bike
Measure: RPM - Step test
## TID Selection Standards for Row To Podium
### U19 Athletes

<table>
<thead>
<tr>
<th></th>
<th>OPEN MEN</th>
<th>LIGHTWEIGHT MEN (18 YEAR OLD)</th>
<th>OPEN WOMEN</th>
<th>LIGHTWEIGHT WOMEN (18 YEAR OLD)</th>
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<tr>
<td><strong>HEIGHT</strong></td>
<td>186</td>
<td>175</td>
<td>175</td>
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<td></td>
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<td>180</td>
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<tr>
<td><strong>ARMSPAN</strong></td>
<td>186</td>
<td>175</td>
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<td></td>
<td>193</td>
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<td><strong>ENDURANCE</strong></td>
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<td></td>
<td>90</td>
<td>90</td>
<td>80</td>
<td>80</td>
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<tr>
<td><strong>LEG PRESS (3)</strong></td>
<td>700</td>
<td>580</td>
<td>400</td>
<td>390</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>750</td>
<td>525</td>
<td>500</td>
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<tr>
<td><strong>BENCH PRESS (3)</strong></td>
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<td>280</td>
<td>150</td>
<td>140</td>
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<td></td>
<td>400</td>
<td>350</td>
<td>205</td>
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<tr>
<td><strong>ARM PULL (3)</strong></td>
<td>450</td>
<td>380</td>
<td>200</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>450</td>
<td>290</td>
<td>280</td>
</tr>
<tr>
<td><strong>Sum of Leg Press(3) and Arm Pull(3)</strong></td>
<td>1150</td>
<td>960</td>
<td>600</td>
<td>580</td>
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<tr>
<td></td>
<td>1300</td>
<td>1200</td>
<td>815</td>
<td>780</td>
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TID WHAT IS POSSIBLE?
GB OLYMPIC ROWING 2012

» GB - 4 gold medals - top rowing nation
» OVER 25% of GB 2012 Olympic rowing team from TID non rowing sources.  *(Aim 10%)*
» 5 of the 10 rowers who won gold medals were from TID sources
ALEX
GREGORY

Olympic champion after 11 years of rowing
ANNA WATKINS

Olympic Champion after 9 years of rowing
HELEN GLOVER AND HEATHER STANNING

Olympic Champions after 5 and 6 years of rowing
STAGES OF TID AND DEVELOPMENT

TID = building solid foundations 5%

Development = building on foundations 95%
PREVIEW OF TASK

1. No movement pattern as base - teach basic movement from zero
2. Anthropometric & engine qualities
3. Need to establish psych attributes incl love of rowing
4. Few will complete the journey
5. MINIMISE attrition – value rare talent!
6. Sequence designed from research and practice
TECHNIQUE= MOVING THE BOAT A LONG WAY BETWEEN STROKES FOR 2KM

1. Row a long stroke (levers)

2. Accelerate the BOAT (pressure – to finish)

3. Let the boat run (rhythm= control forward)

4. Correct body posture (core, lumbar spine, pelvic rotation)
LIMITS TO TALENT PATHWAY

» “TRAINING WILL BEAT TALENT UNTIL TALENT TRAINS”

» TID will never replace the regular role of clubs in providing the bulk of the top competitors

» Early Maturation vs late maturation – different time of peaks in performance
PATHWAY OF NON-ROWER TO HIGH PERFORMANCE

» Athletes are blank canvas (no faults, no skills)
» Errorless learning and rapid development
» Enthusiastic concentrated coaching
» Ability to exceed perceived limits
» Excellent coach development opportunities
DEVELOPMENT SEQUENCES

» Balance  before  technique
» Sculling  before  sweep
» Power  before  endurance
» Automate  before  extensive training
» Automate  before  fatigue training
» Posture  before  loading
» Core  before  loading
» Flexibility  before  loading
PATHWAY OF NON-ROWER TO HIGH PERFORMANCE

» Athletes are blank canvas (no faults, no skills)
» Errorless learning and rapid development
» Enthusiastic concentrated coaching
» Ability to exceed perceived limits
» Excellent coach development opportunities
CASE STUDY
GRAHAM PEETERS

3rd Generation Farmer
Rural Ontario
Minimal sport background

Identified: April 2012
Age at test: 16.75 (1996 birth year)
Height: 193.9 cm
Arm Span: 206.9 cm
Strength: 1417 nm
Bike: 90
Development Trials – May 2013
1x - 3rd of 13 boats
2x Matrix – Last place

Junior Selection – June 2013
1x – 1st of 12 boats
2x Matrix – Won every race
World Rowing U23 Championships

BM4x : 7th place
BM4X AT WORLD CHAMPIONSHIPS
ERRATIC PERFORMANCE BY YOUNG TALENT

» 2014 – 7th place (injury)

» 2015 – World U23 Champions (one change from 2014)

» 2016 – 11th place (one change from 2015)
FUTURE POTENTIAL

**Graham Peeters**
Identified: April 2012
Birth year: 1996
Age at test: 16.75
Height: 193.9 cm
Arm Span: 206.9 cm
Strength: 1417 nm
Bike: 90

**New Recruit**
Identified: Sept 2014
Birth year: 1998
Age at test: 16.45
Height: 195.5 cm
Arm Span: 198.8 cm
Strength: 1472 nm
Bike: 93
TECHNICAL / SKILL DEVELOPMENT

» “Technique limited training” to maximise rapid but accurate technical development

» Intense coaching (1:1 ideal)

» Continuous feedback

» Coach demands change from every feedback comment (improvement mentality)

» Eliminate technical limit on later performance
HPDP RATIONALE FOR TECHNICAL DEVELOPMENT

Performance

Years

Performance resulting from traditional Development (red) compared to extensive early skill development (green) in two highly talented TID athletes.
» Training will beat talent until talent trains.

» TID will never replace the role of clubs in providing the bulk of the top competitors.

» Nearly all rowers will attend a university for academic reasons.

» TID can provide 10% of the very best athletes.
• The end