Effective Year Round Athlete Monitoring Sport Science
Purpose-Direction-Intent
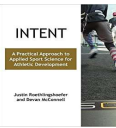
JUSTIN ROETHLINGSHOEFER MS, CSCS, SCCC, LMT

ANAHEIM DUCKS/SAN DIEGO GULLS

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A Practical Approach to Applied Sport Science for Athletic Development

Justin Roethlingshoefer and Devan McConnell

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Thank you

- Polar
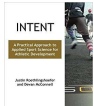- Anaheim ducks
- San diego gulls
- Umass Lowell riverhawks

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Humboldt project
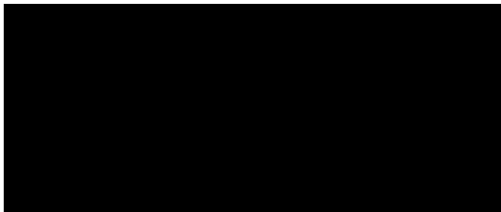
Sales from intent at the conference will go to the broncos family fundraiser

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Augmented Reality?

- How many of us can relate?

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The Joey Tribiani

- High HRV or low resting hr (best of the year)
- Low Force Plate Jump
- Faster speed assessment than week previous but not best of year
- average Subjective Questionnaire
- On point for projected weekly training load
- How do you make sense of it?

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Monitoring

- What is it?
- – Monitoring refers to the collection and analyzation of various metrics, in order to better understand the "what" and the "why".
- What- what is actually occurring
- Why- why is that happening

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Analytics

- "…we mean the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions."
- Competing on Analytics

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Why do we monitor?

- To gain better insight
- To ask better questions
- To attack the 1%

The most dangerous phrase in the language is "we've always done it this way."
Rear admiral Grace Hopper

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Gain Better Insight

Take the guesswork out of the equation

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Ask Better Questions
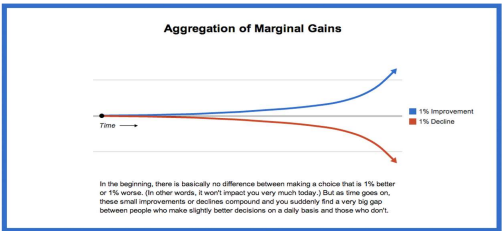
Originally I thought "data" would provide *the* answer

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Attacking the 1%

Aggregation of Marginal Gains

1% Improvement
1% Decline

Time

In the beginning, there is basically no difference between making a choice that is 1% better or 1% worse. (In other words, it won't impact you very much today.) But as time goes on, these small improvements or declines compound and you suddenly find a very big gap between people who make slightly better decisions on a daily basis and those who don't.
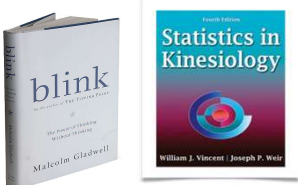
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Art vs. Science

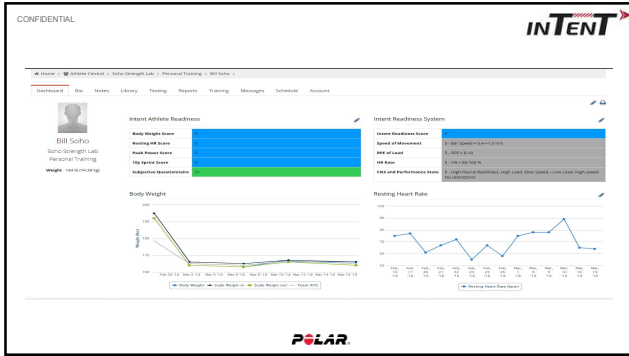## Why Not Both?

- Data should add context to what the eyes see

Intent

Individualization

Heart Rate

Peak Power/Speed

Subjective Questionnaire

Workload and Stress

Training Load

- Real Time HR Response
- Retrospective/ Post Analysis Evaluation
- Training Load based on TRIMP
- Intensity Density

Training Load

Post Analysis HR Response

Workload By 5 Minute Segments

HR Graph

Back End Analytics - TL vs. Density

Acute: Chronic Workload
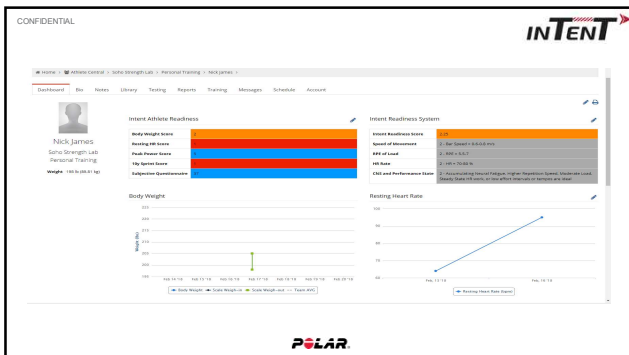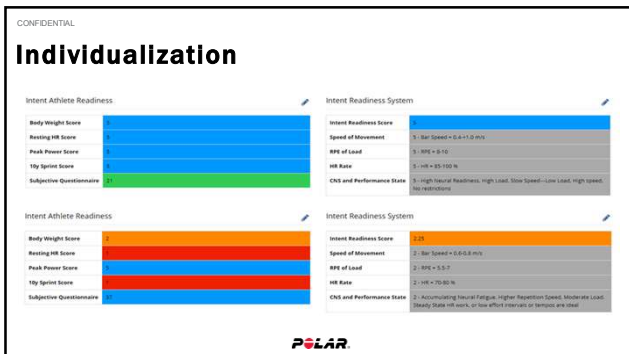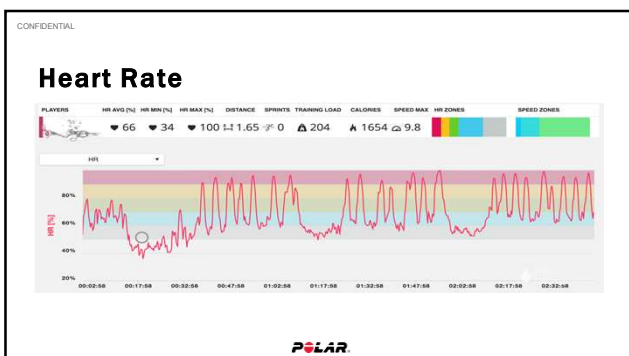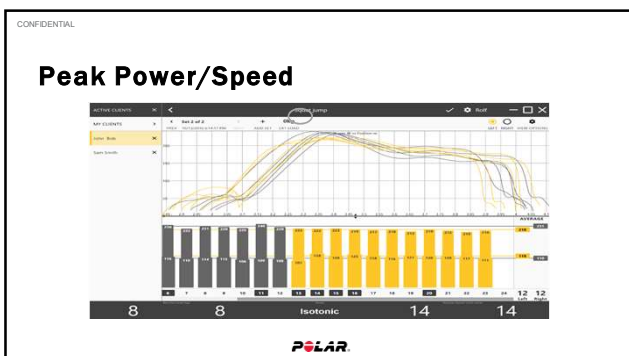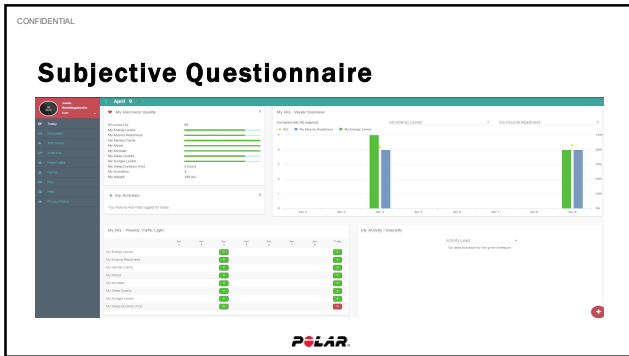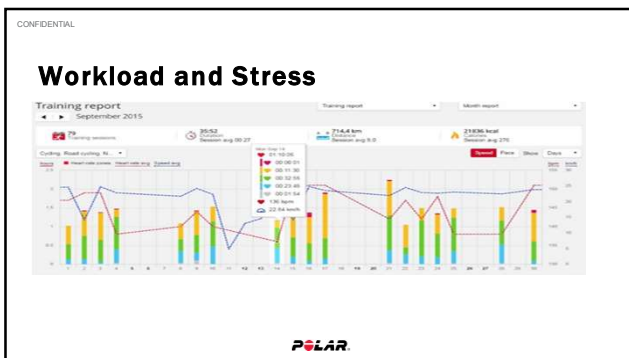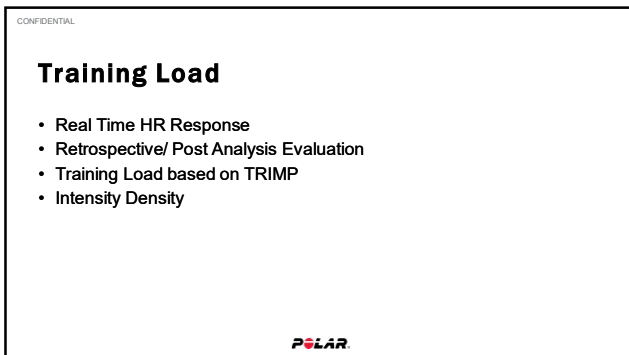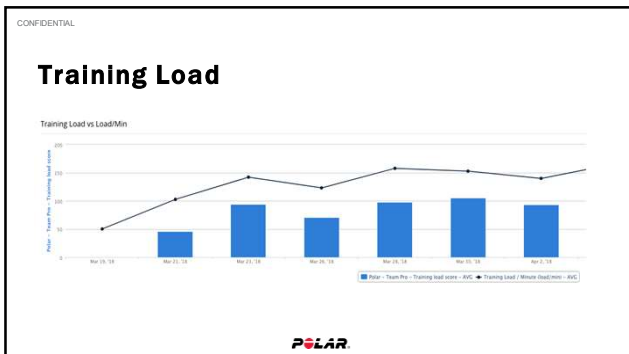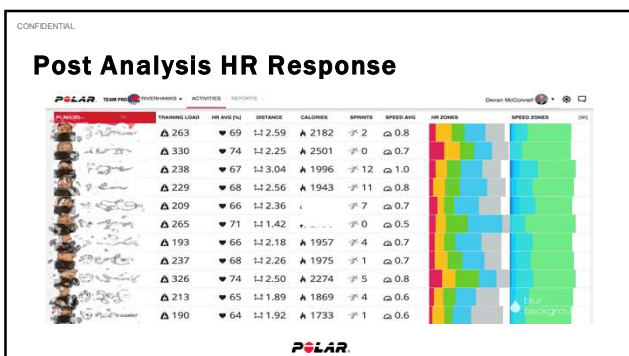
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How Does All This Data Fit Together?
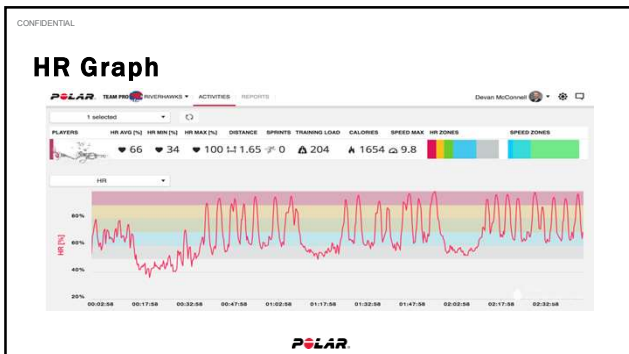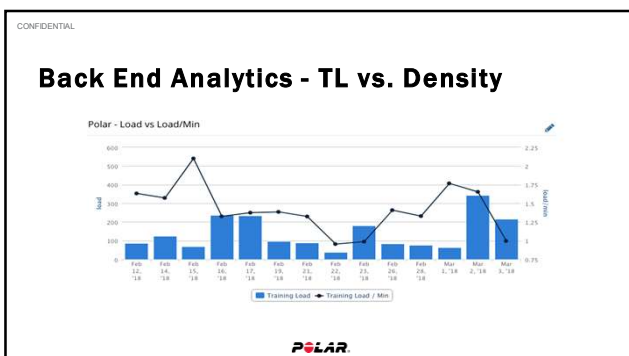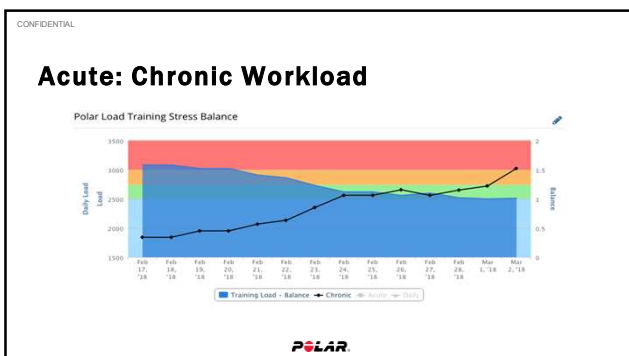
- What does each metric tell us?
  – By themselves, nothing. Together, starts to shed light on questions

- Painting a broad picture, broad strokes
  – all of this information gives us an overview of the athlete

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Practical- The Use of Heart Rate Monitoring

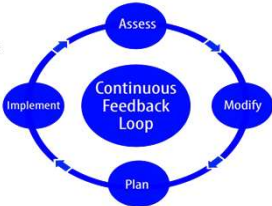- **What are we doing with the data???**
  – **In Season**
  – **Off Season**

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In Season

- Monitor Training Load and Readiness

- Assess Results

- Provide Feedback

Continuous Feedback Loop
Assess
Modify
Plan
Implement

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Reporting to Staff

- Weekly Reports
  - Formal
    - Breakdown of the past, plan for the future
  - Informal
    - Conversation…influence thought process

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Weekly Reports

- Last week's numbers (and what does it mean)
  - » How intense were the games
  - » How were recovery numbers leading in
- Advice on set up of the next week

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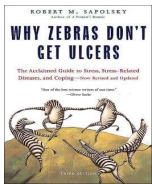## How Does the Info Change The Program?

- Scheduling the week to win
  - Thresholds that led to better win%
    - Won more than **70%** of points available when correct thresholds met

  - Change how we "develop" players
    - What are we trying to develop??

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Physiologically Based Practices

- Stress is Stress

- Is Hard or Easy "Good"?

- High/Low Approach?

ROBERT M. SAPOLSKY

WHY ZEBRAS DON'T GET ULCERS

The Acclaimed Guide to Stress, Stress-Related Diseases, and Coping—Now Revised and Updated

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Practical Example: Goalies

- <u>Should</u> be Alactic-Aerobic
- <u>Should</u> be most explosive
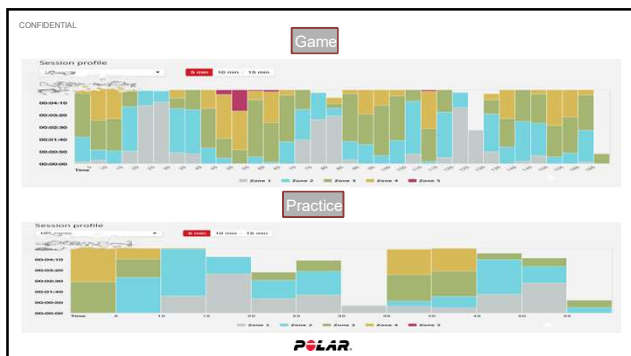- How many of our goaltenders look like that?

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Game

Practice

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Game

Session profile

Practice

Session profile

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Summer

- Players go home…how can you link what they do on their own with what they'd be doing at the facility in season?

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Goal

- Application of training protocols when someone is:
  – Away from the team facility
  – Home for the summer
  – On the road vs at home facility with you
  – How does it track everything in one spot?
  – Solution for identifying motivation and accountability
  – World of knowledge and understanding (players want to know and be educated)

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Example

Example

IMPROVEMENTS
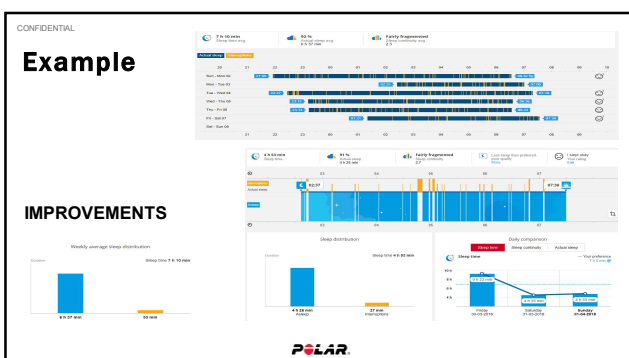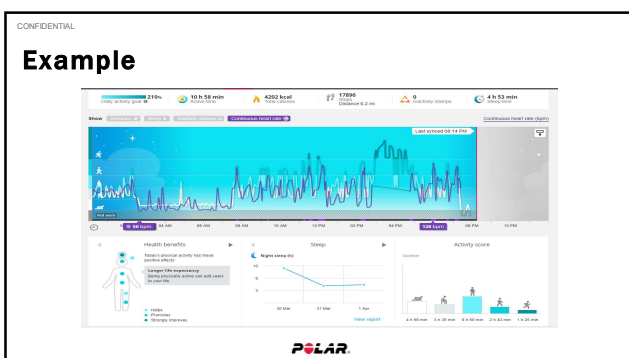
Example

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Example

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Takeaways

- Are you just collecting numbers?
- Are you using the info you collect?
- Are you building a culture where sport science is desired by the athlete/coach, or feared by the athlete/coach

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Thank you!!
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Humboldt Project

Sales from intent at the conference will go to the broncos family fundraiser

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