Does Training Affect Match Performance?

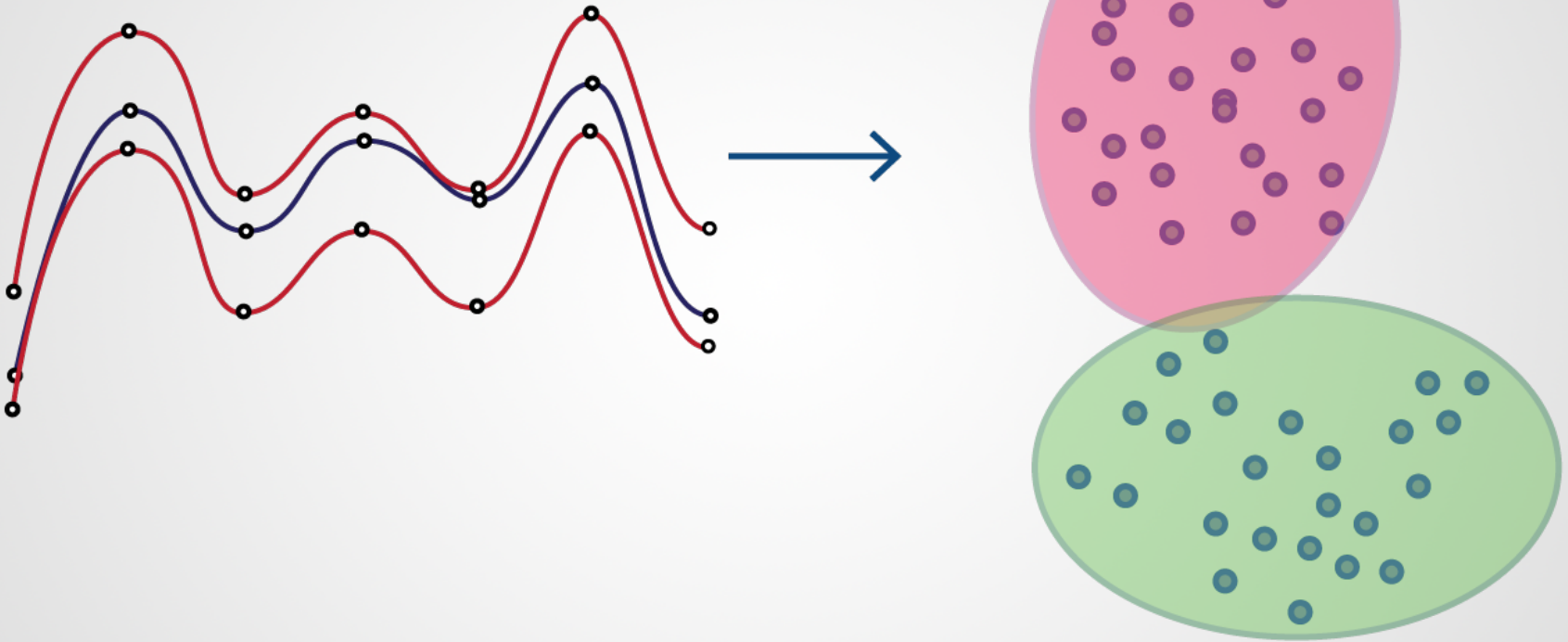
A Study Using Data Mining And Tracking Devices

Fernández, J. Medina, D., Gómez A., Arias M., Gavaldà R.

TRAINING

MATCHES

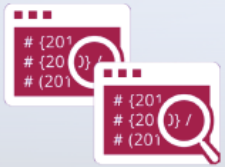
From Training Variation to Match Performance



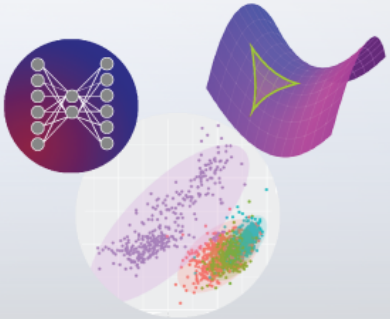
Daniel Kahneman's and Aaron Coutts “Thinking, Fast and Slow”

Data Collection

Storage and structuring



Building Dataset for Specific Purpose



Adaptation of Statistical Methods and Machine Learning

Slow-Thinking

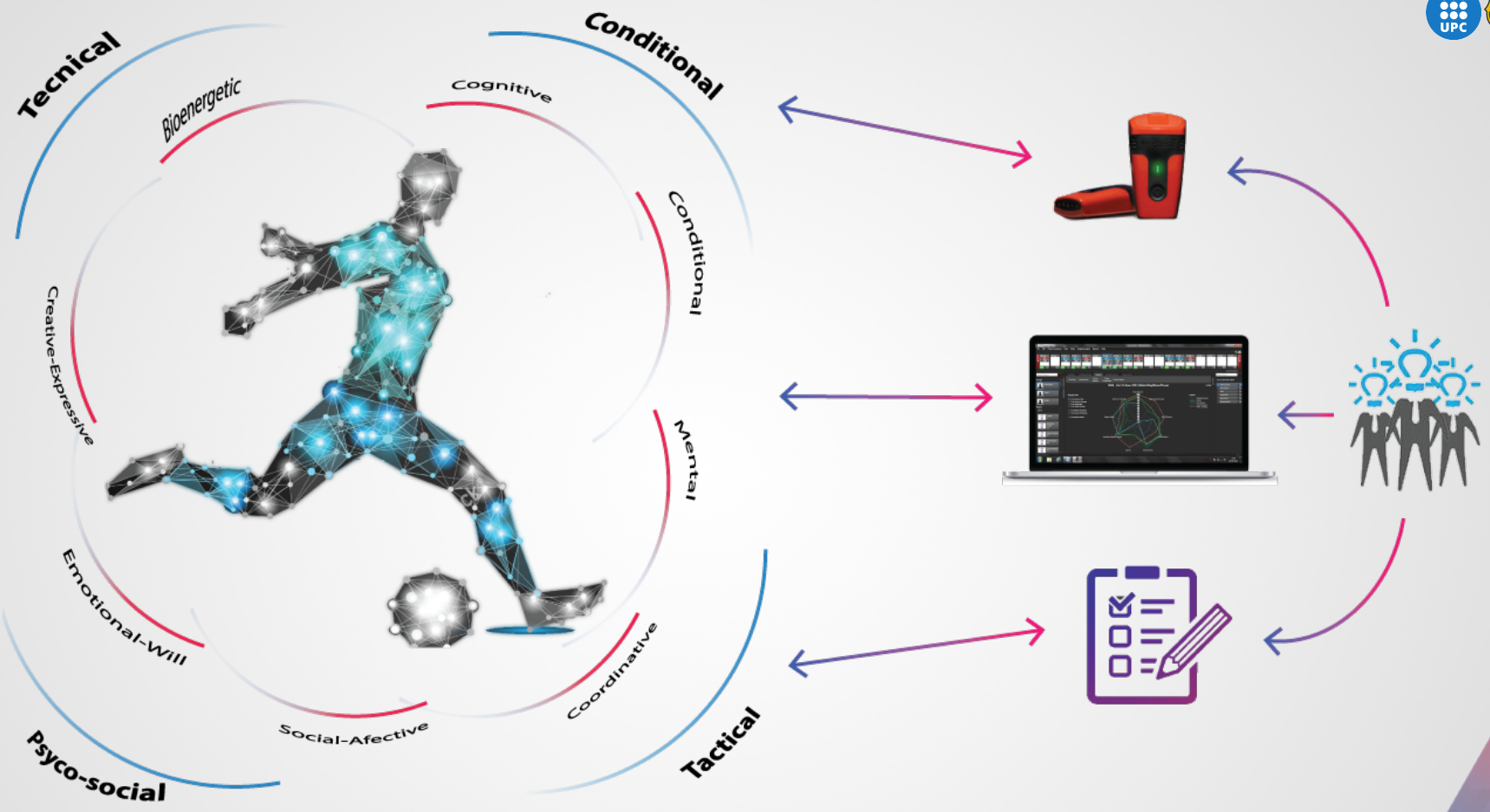
Validation of believes and observations

Findings and new observations

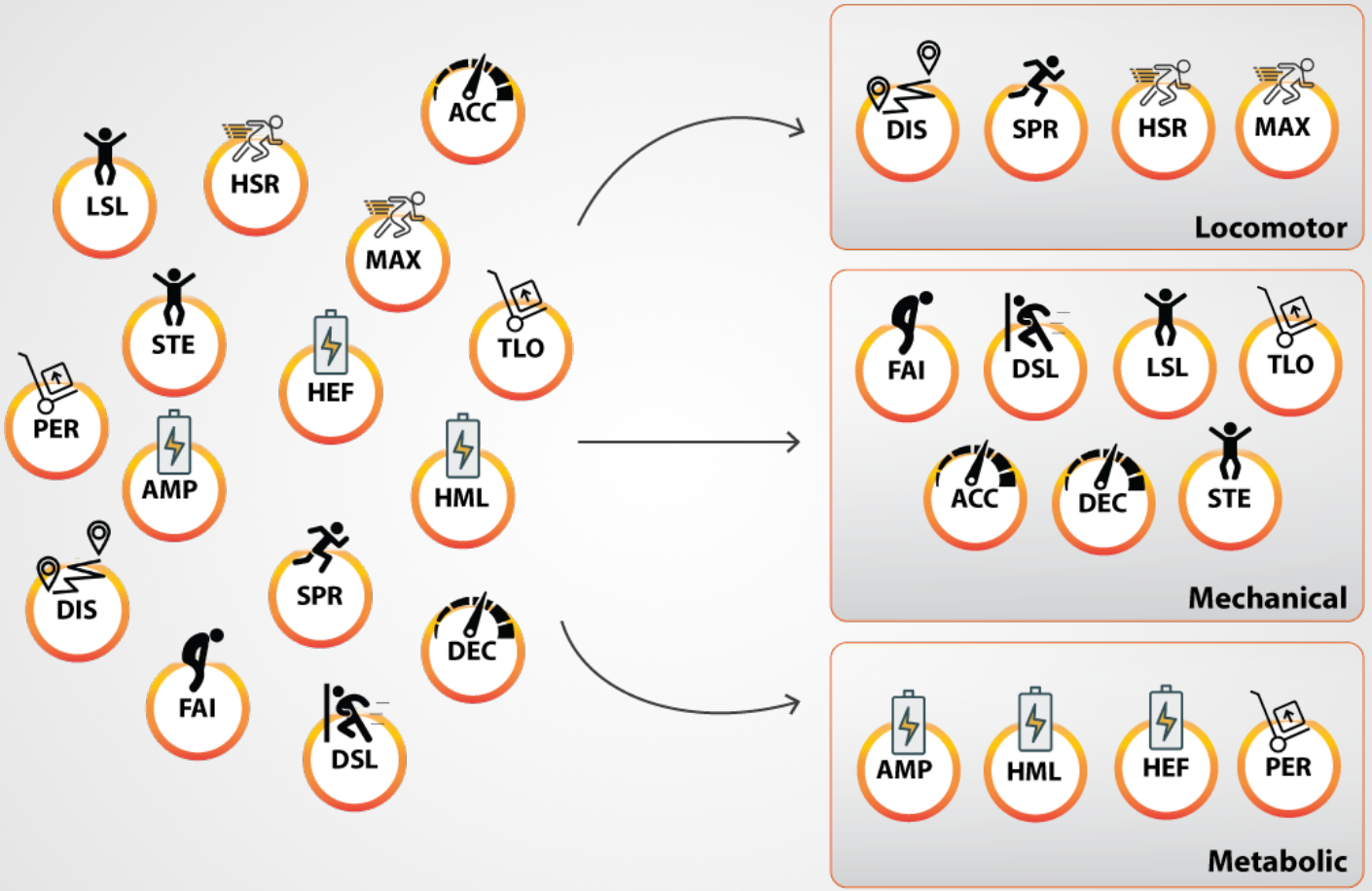
Creation of practical methods and software

Applicable Results

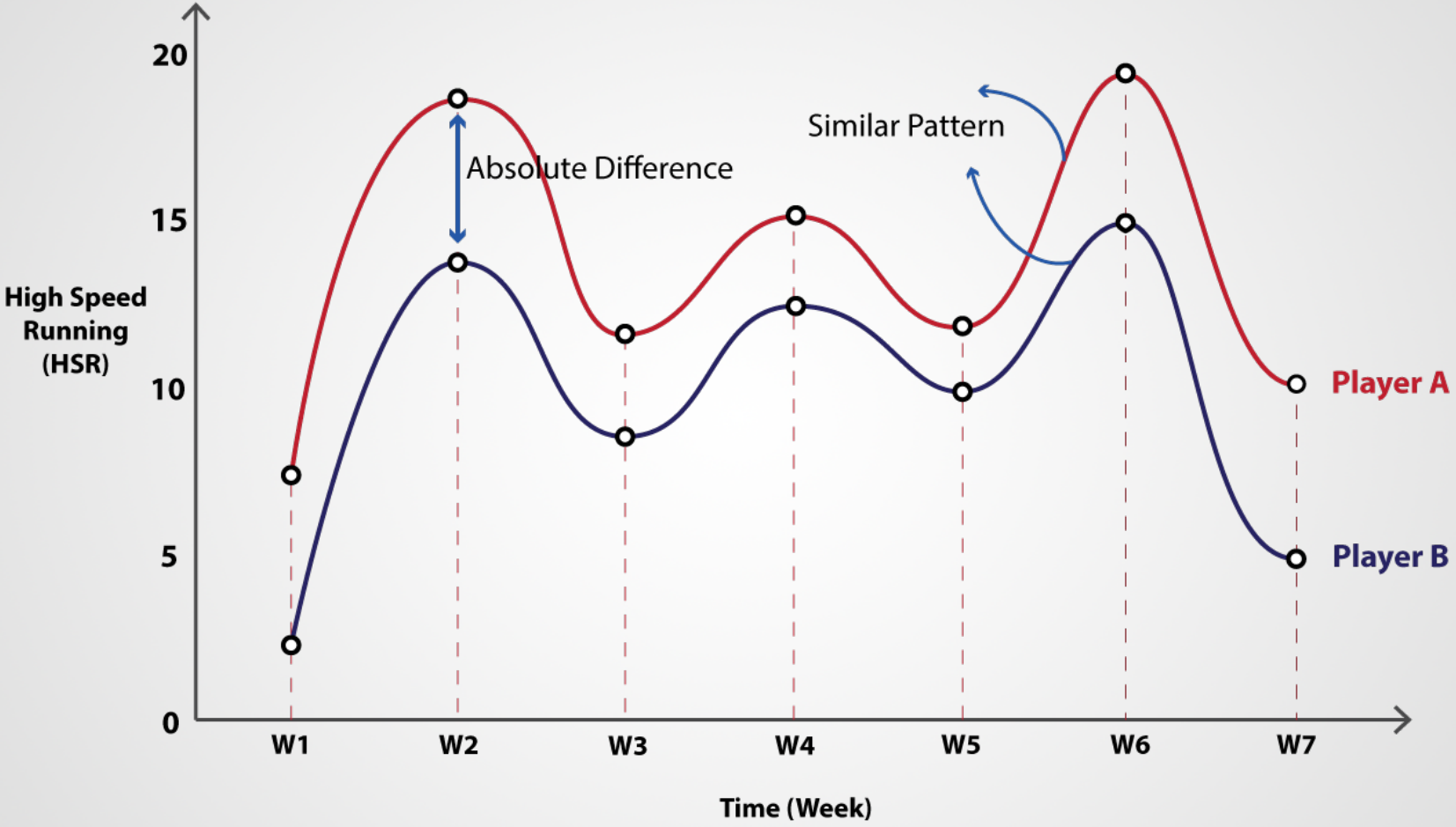
Fast-Thinking


Tecnical
Conditional
Tactical
Psyco-social
Bioenergetic
Cognitive
Conditional
Mental
Coordinative
Social-Afective
Emotional-Will
Creative-Expressive

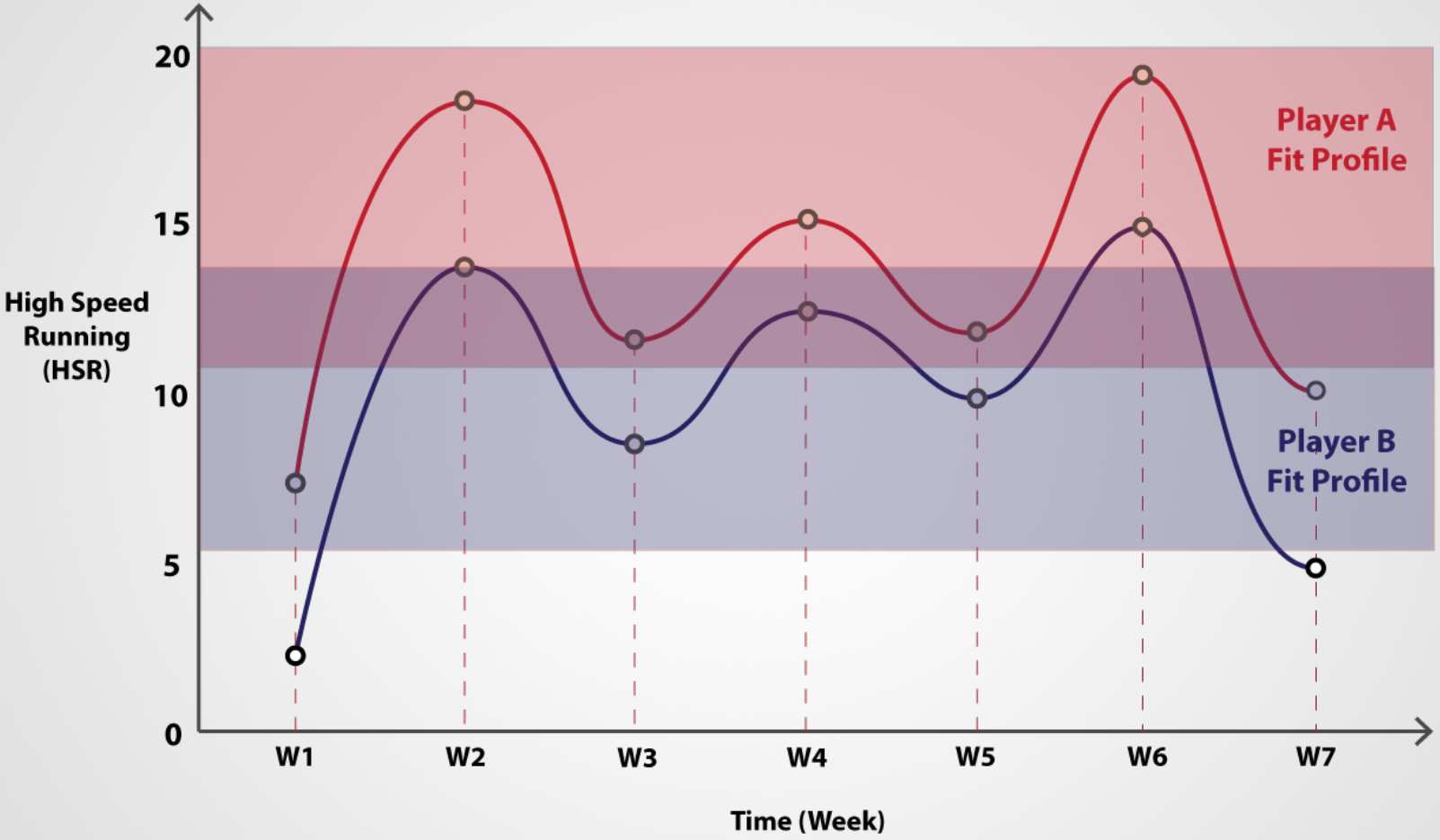
Structuring Physical Variables



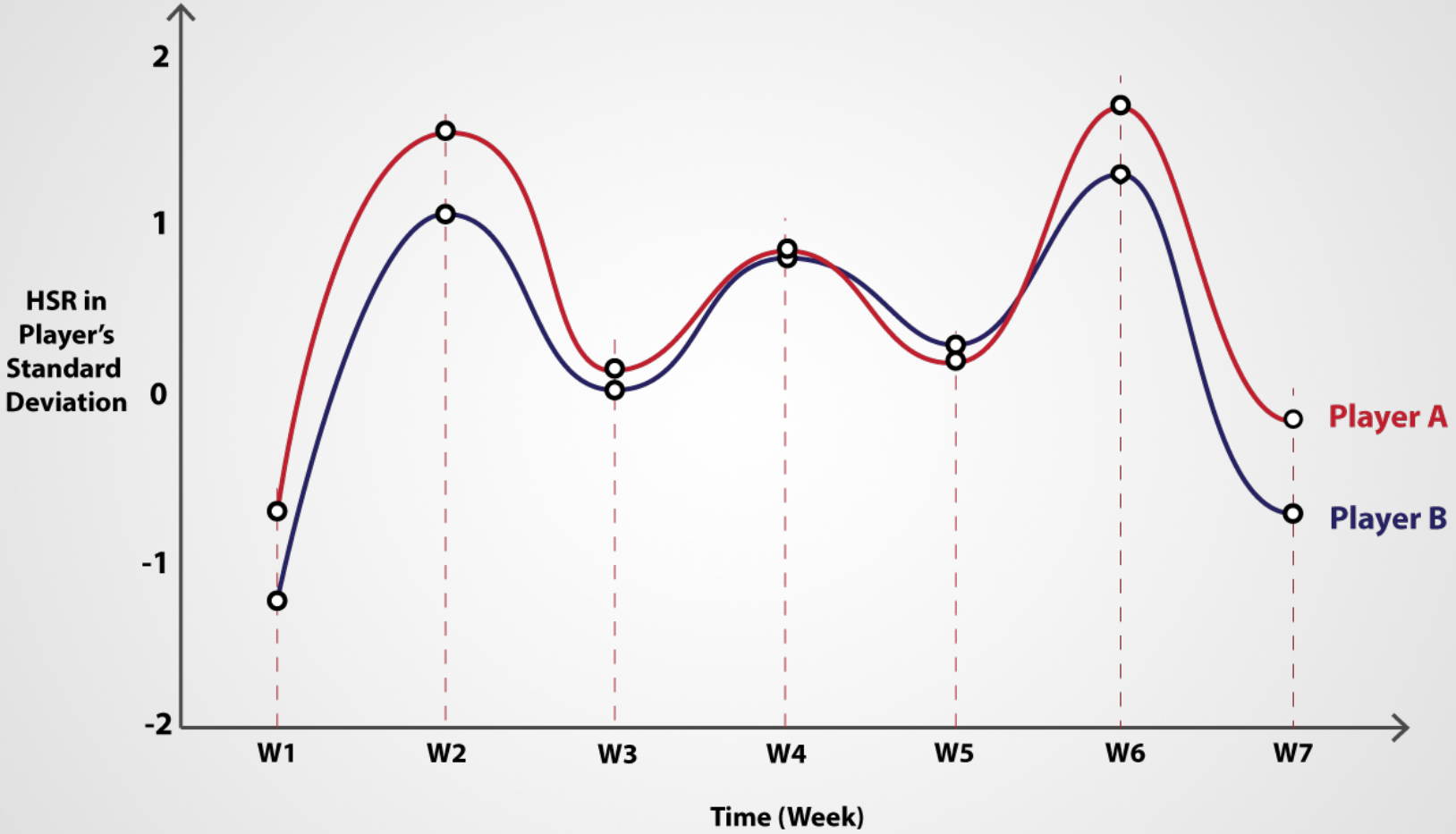
Observing Physical Variables in Time



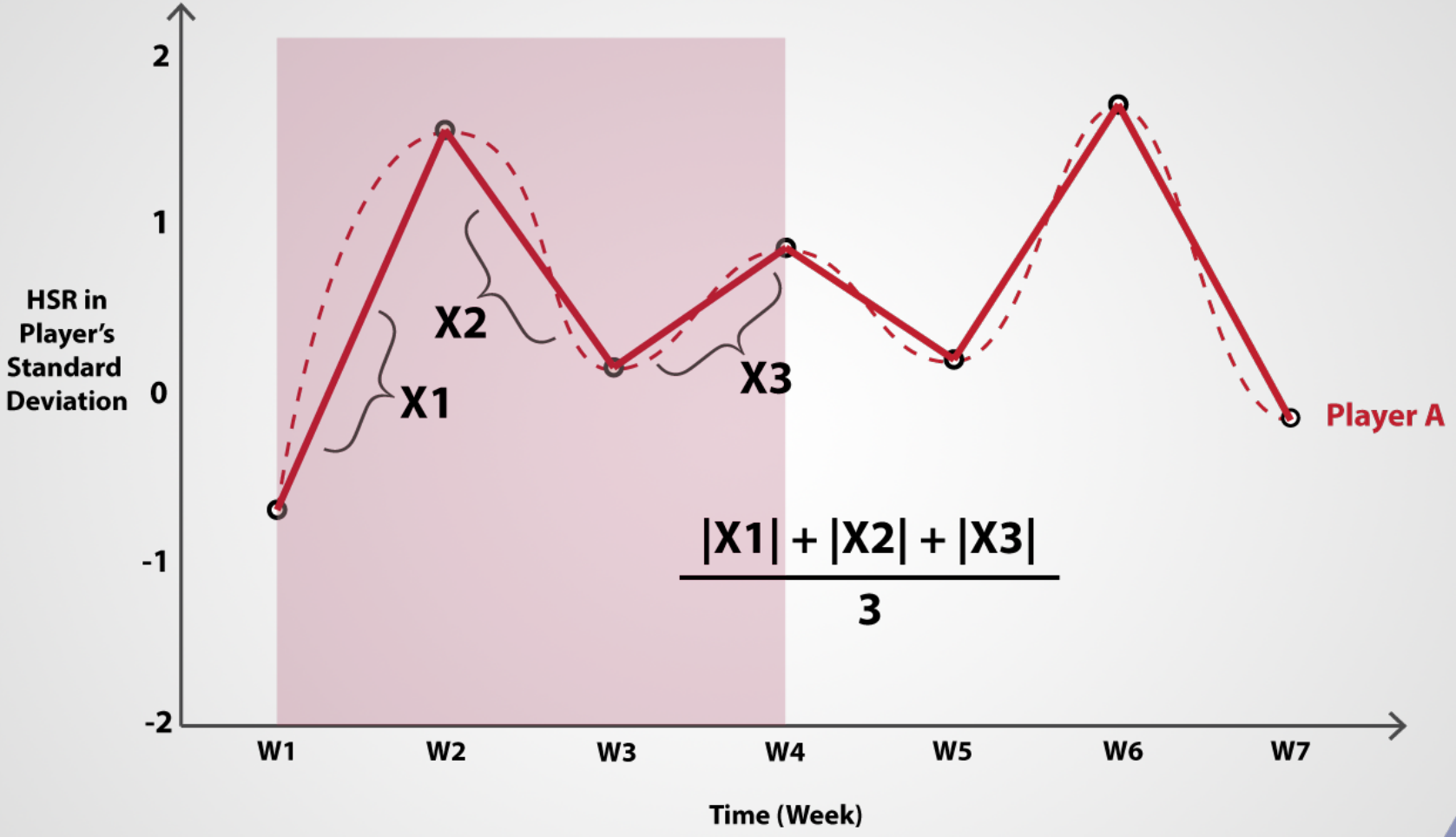
Observing Physical Variables in Time



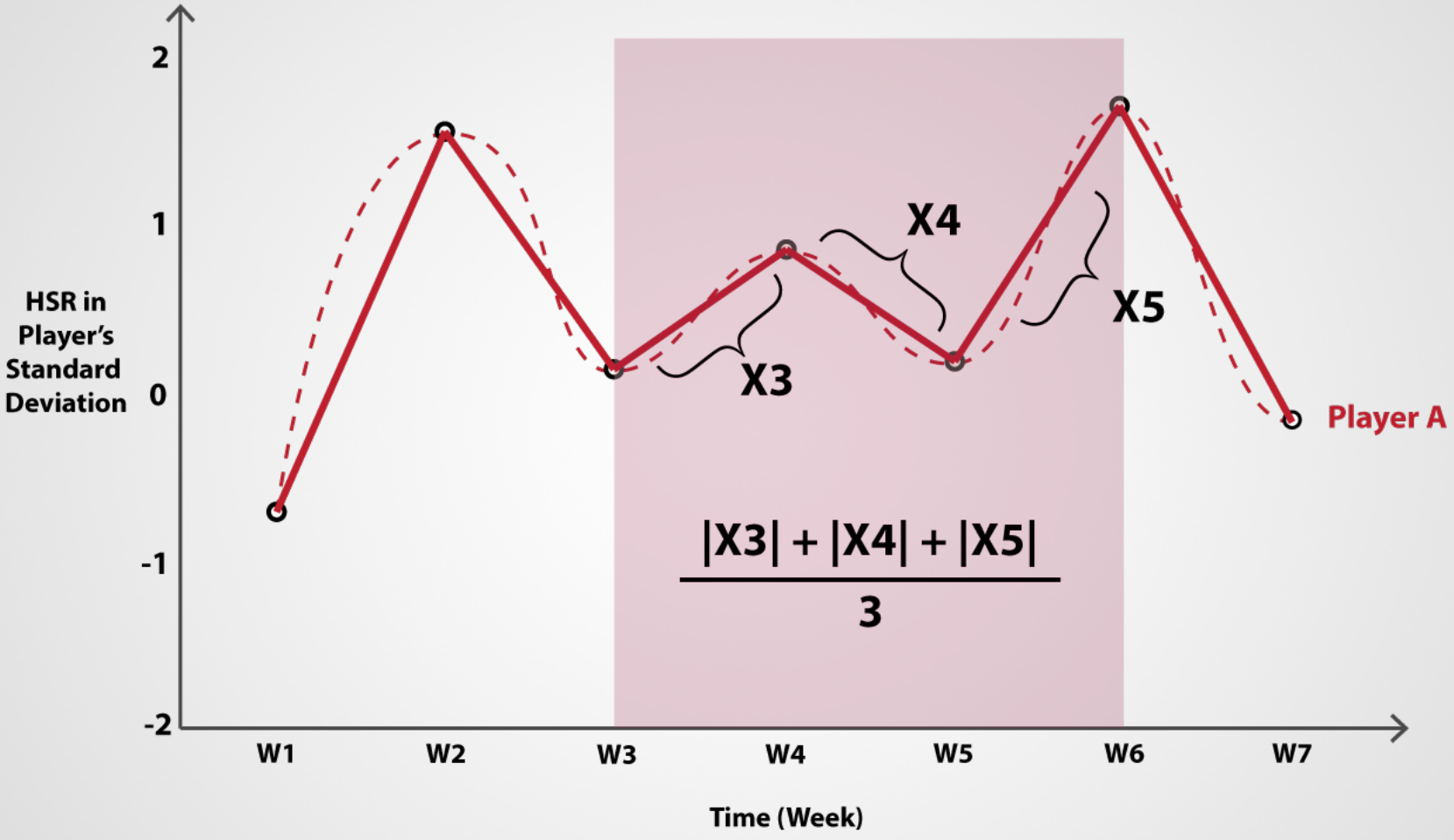
Normalizing to Compare Players Fairly



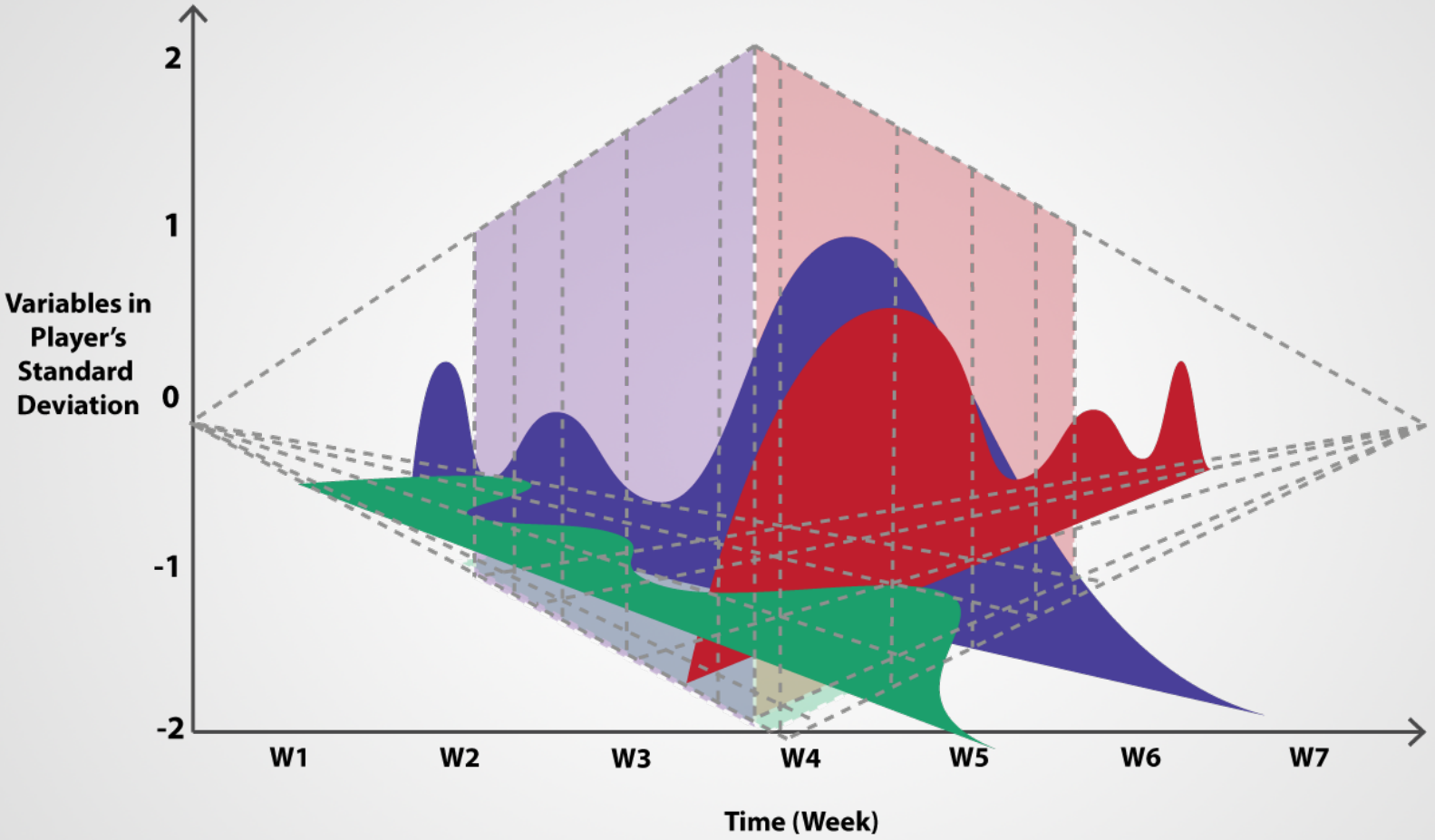
Calculating Magnitude of Variation/Oscillation



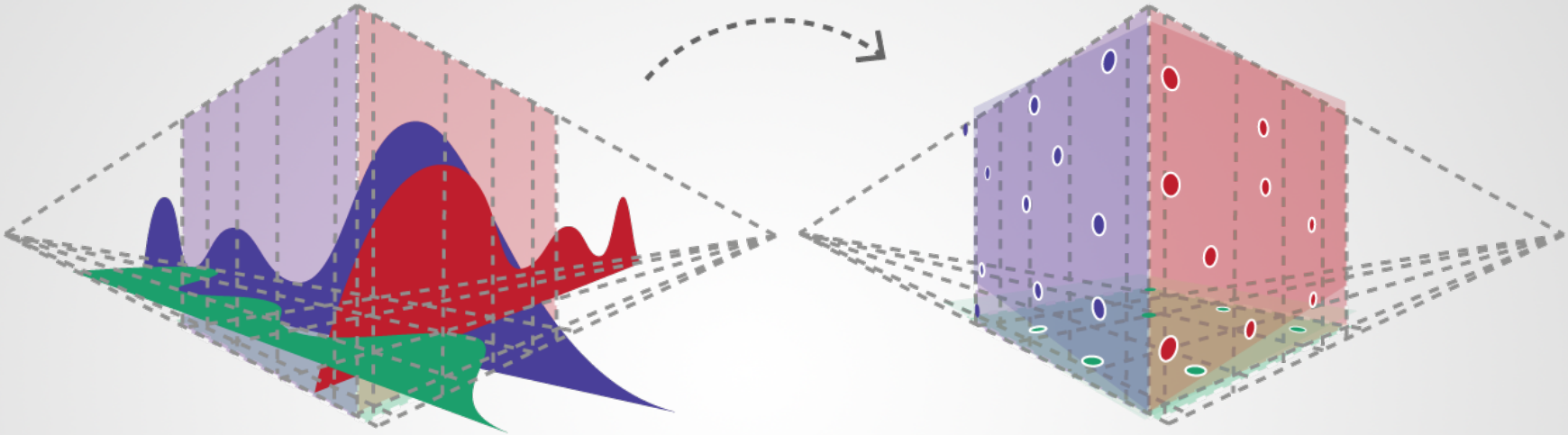
Calculating Magnitude of Variation/Oscillation



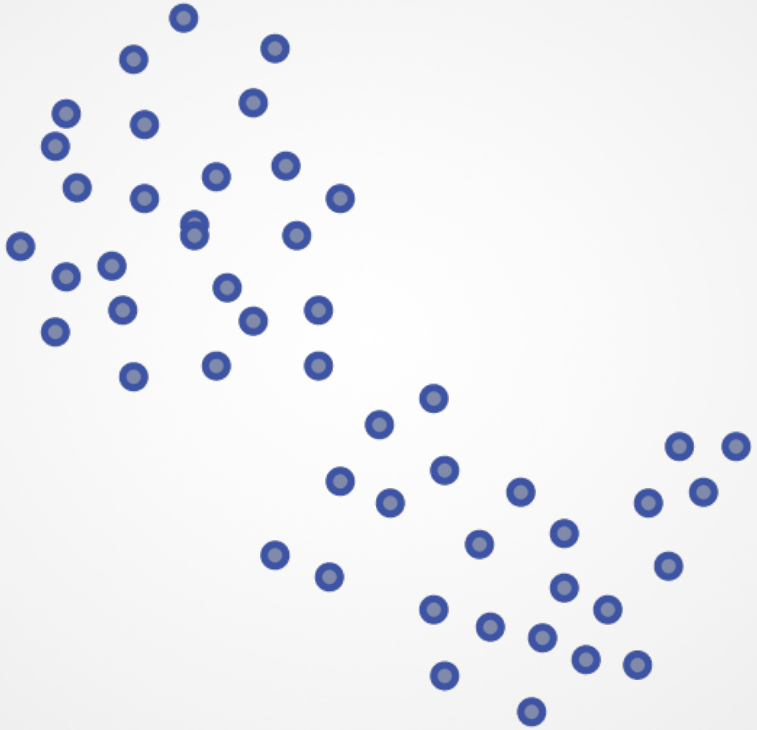
Multidimensional Space



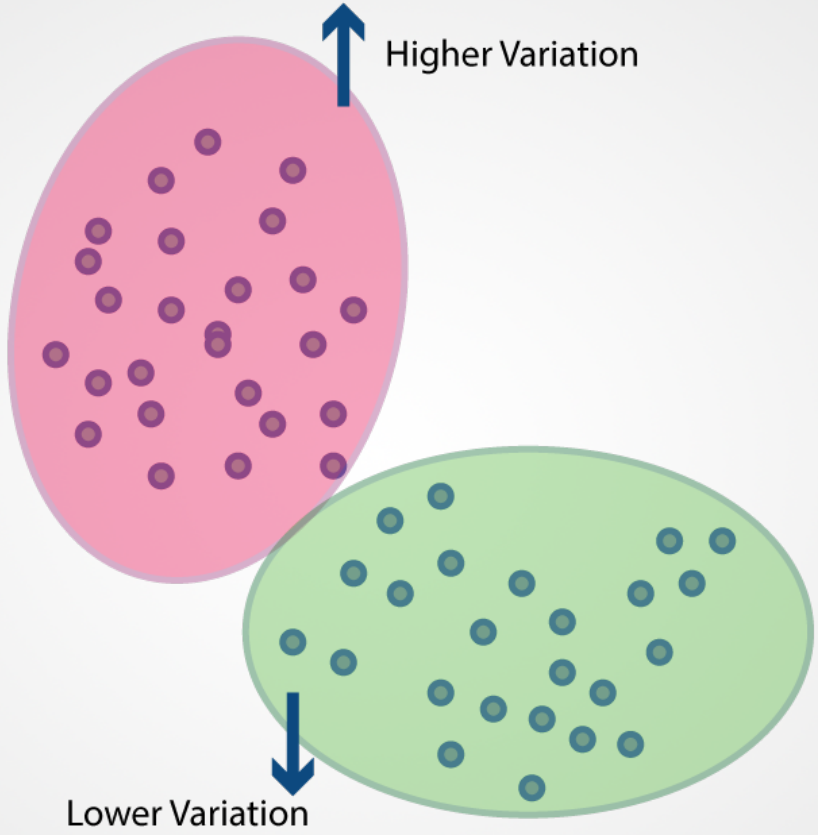
Variations are Transformed into Data Points in 15-dimensions



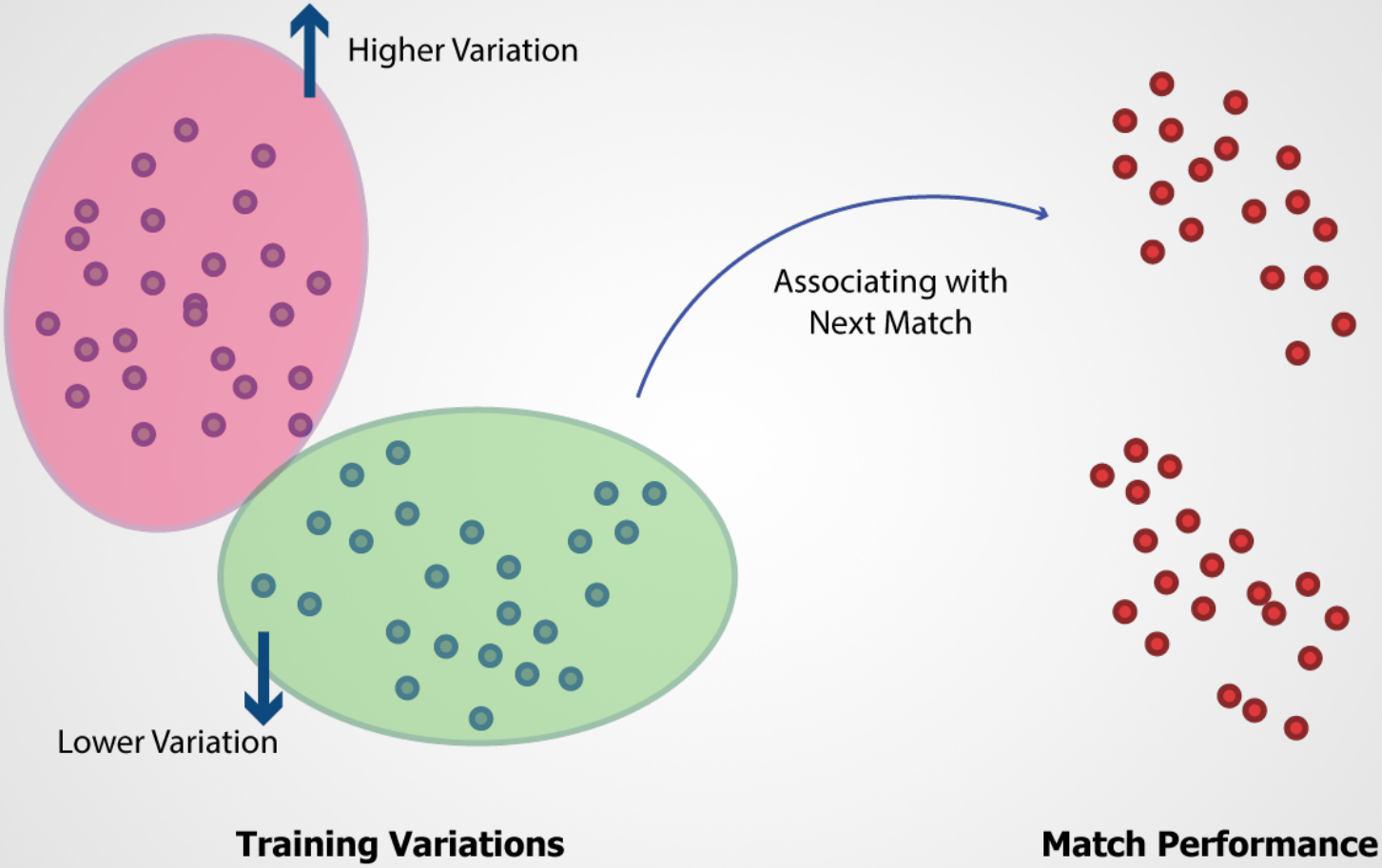
Cluster Analysis Over Training Physical Variables



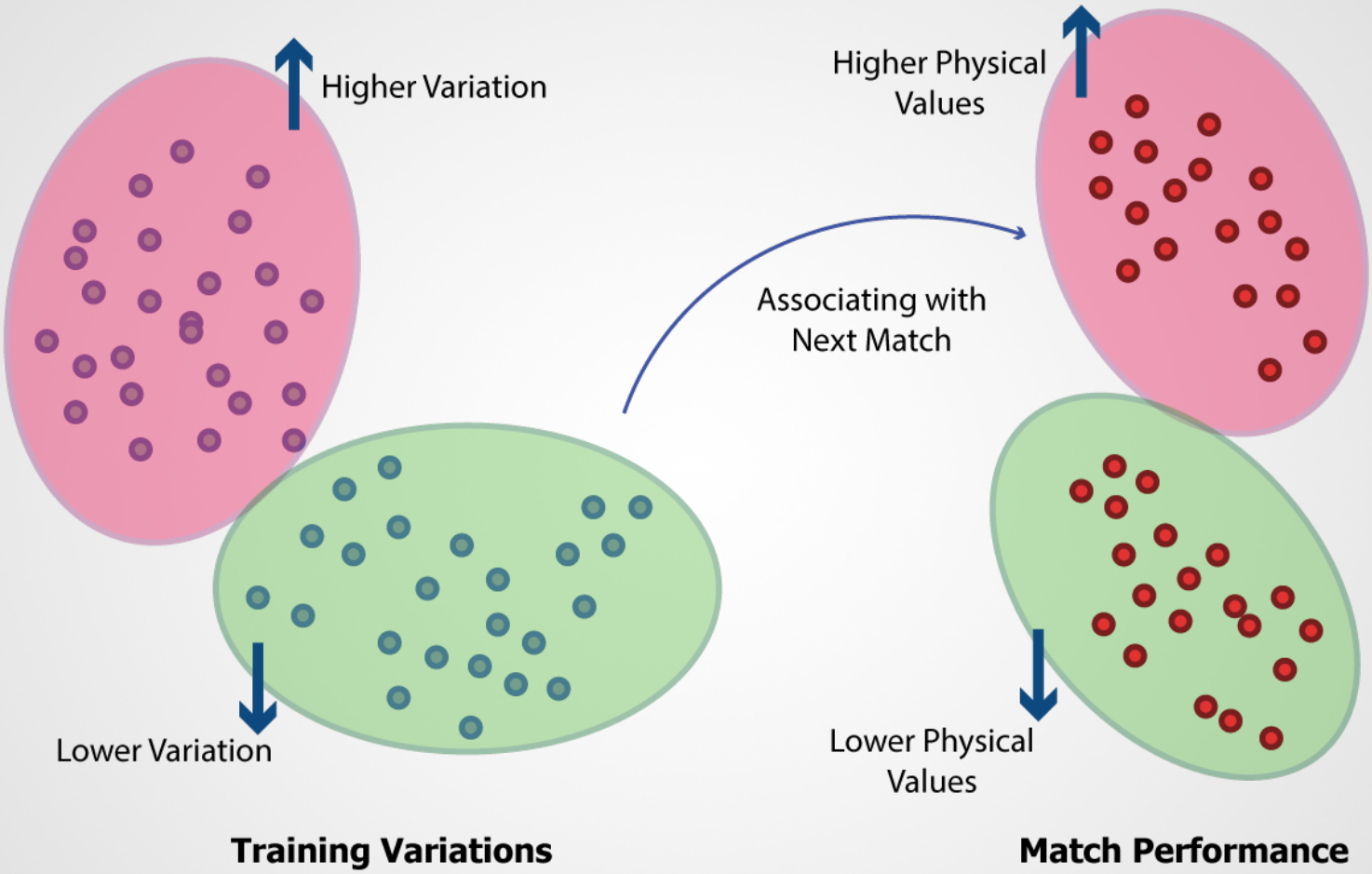
Cluster Analysis Over Training Physical Variables



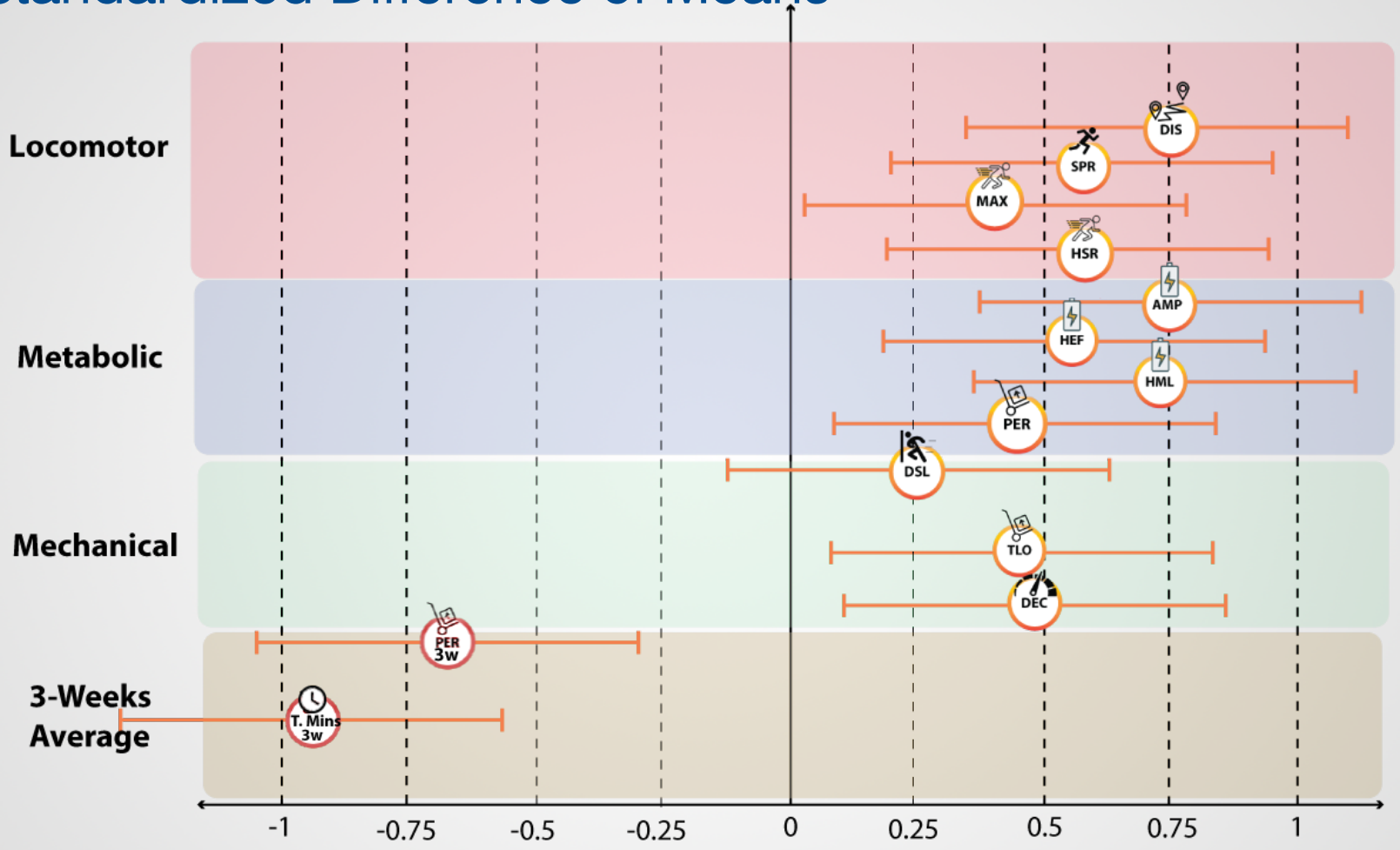
Associating with Player's Next Match Physical Variables



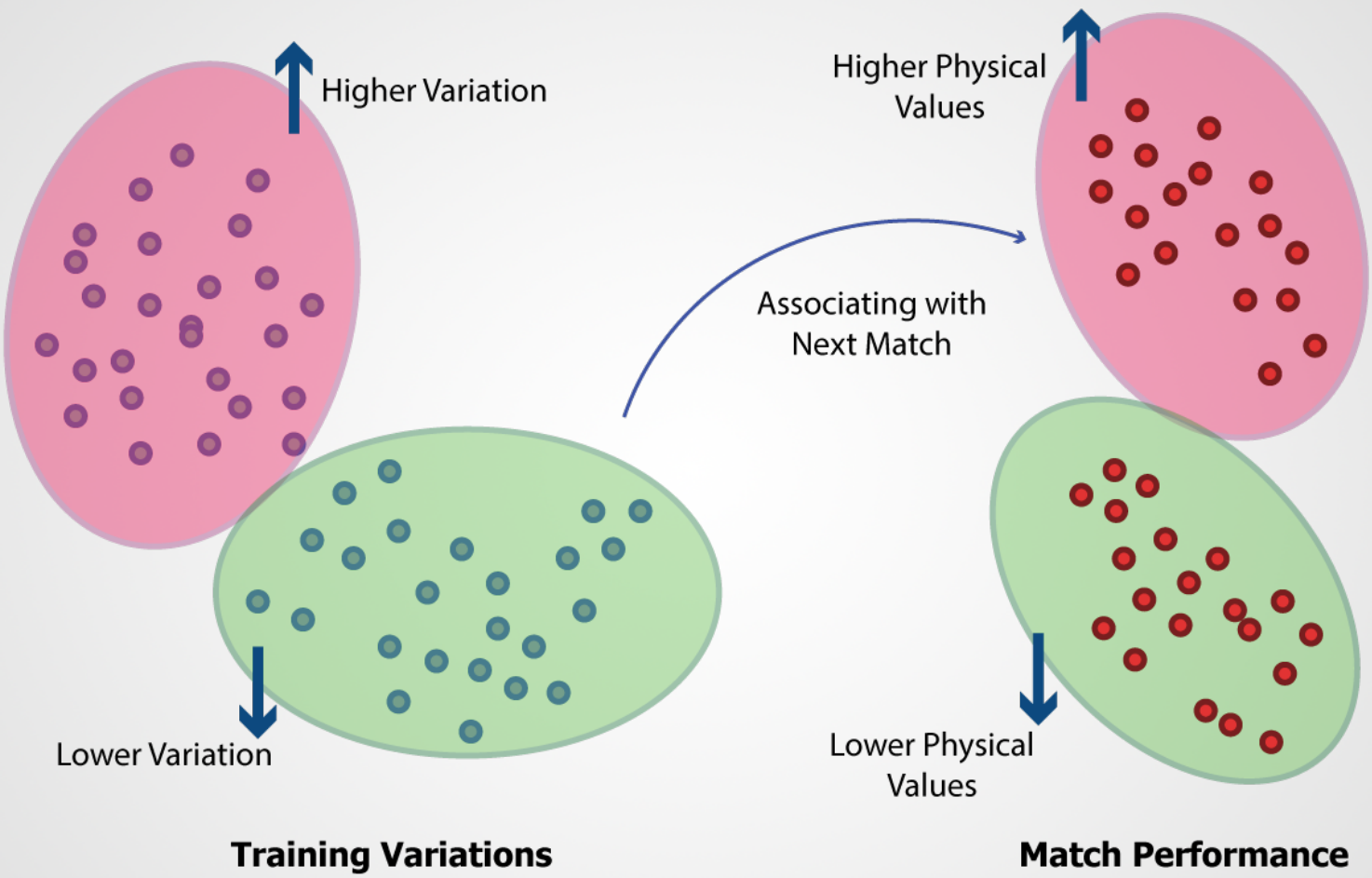
Associating with Player's Next Match Physical Variables



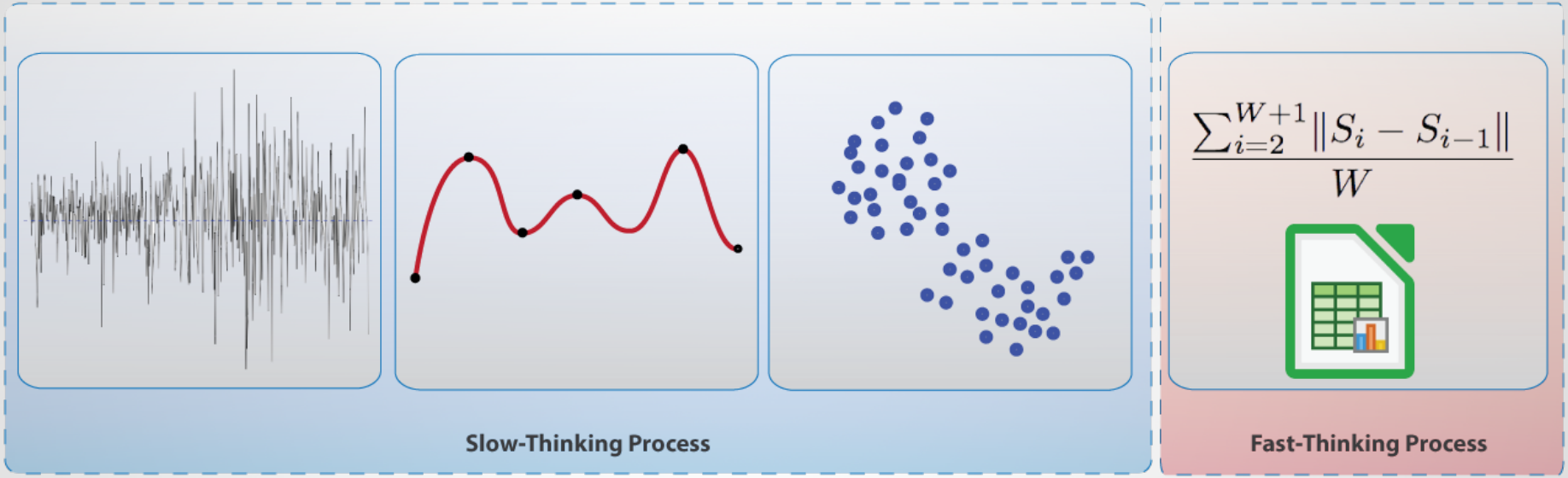
Standardized Difference of Means



Good News (1)


Higher Variation
Lower Variation
Training Variations
Associating with
Next Match
Higher Physical
Values
Lower Physical
Values
Match Performance

Good News (2)


$\frac{\sum_{i=2}^{W+1} \|S_i - S_{i-1}\|}{W}$
Slow-Thinking Process
Fast-Thinking Process

Thank you! Questions?

Fernández, J. Medina, D., Gómez A., Arias M., Gavaldà R.