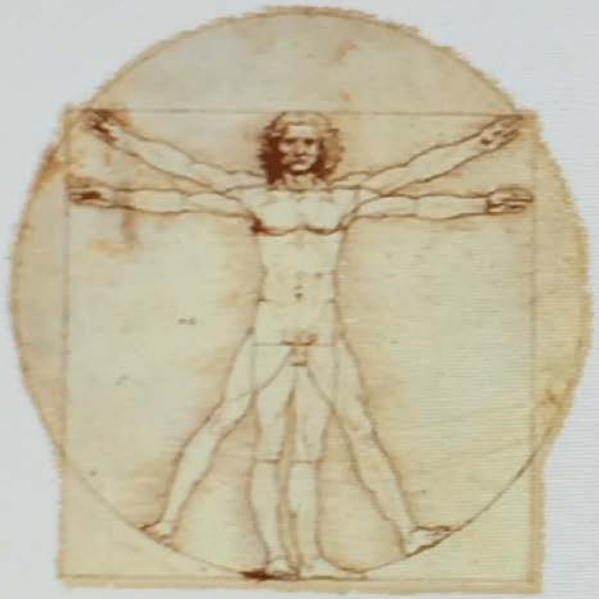
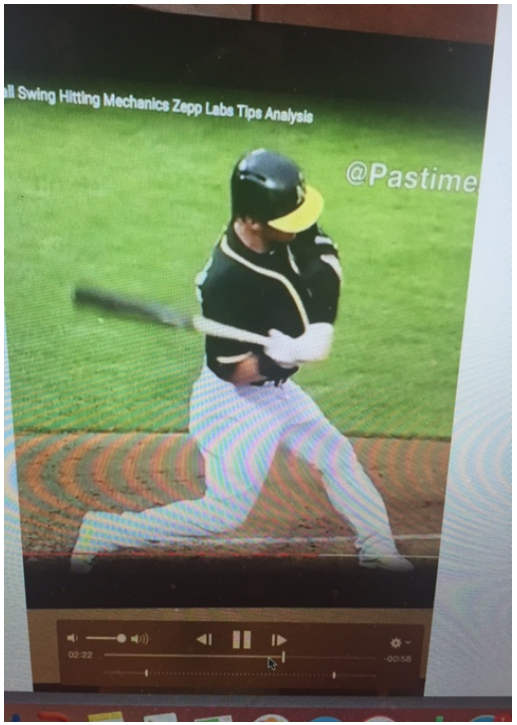
The Medici Effect



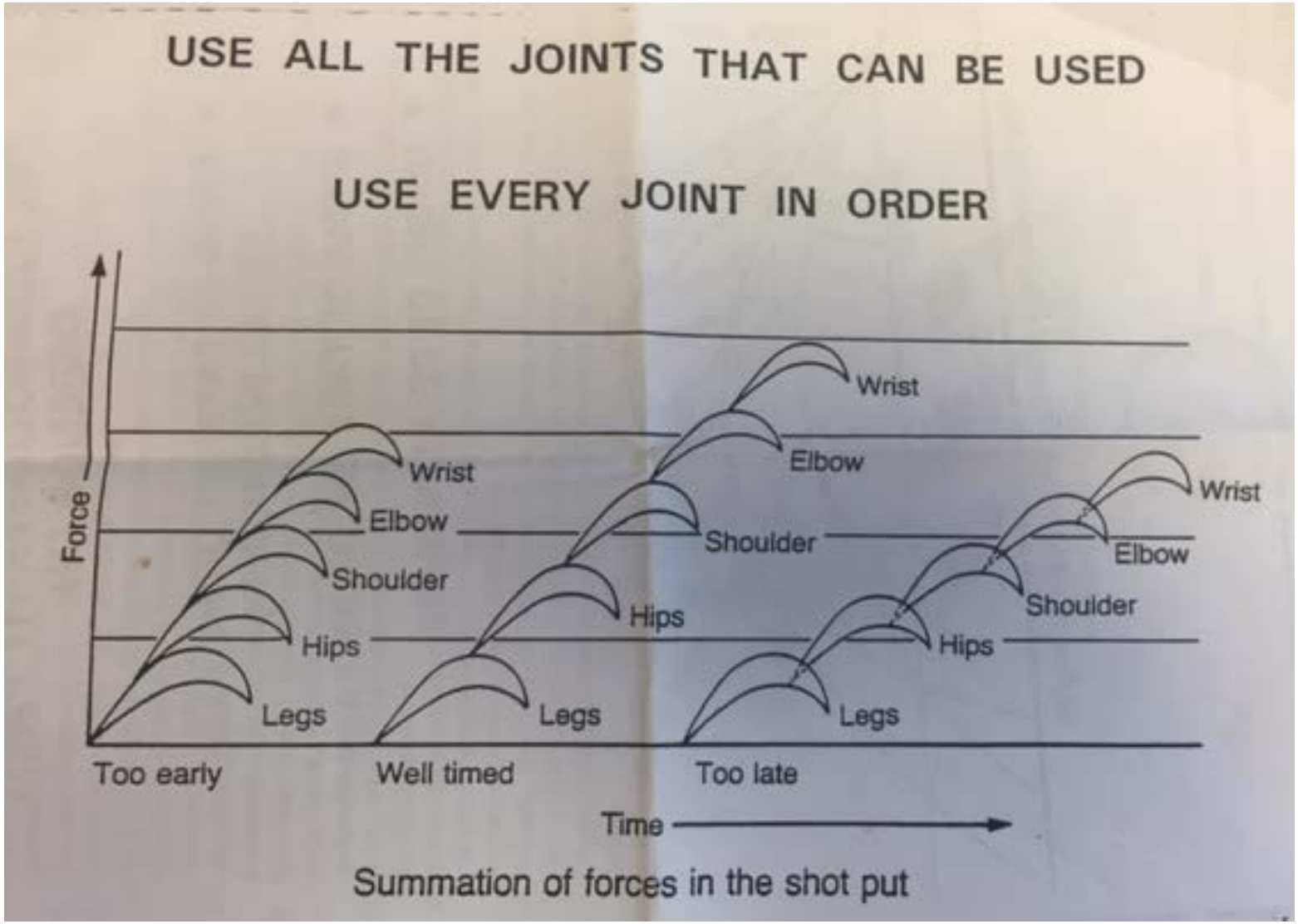
Look at different disciplines and search for places where they intersect. At these intersections is where a myriad of new ideas and applications can be explored.

Comparing the three combined events throws and baseball/softball swings

1. Transfer of weight from back to front
2. Application of force from the ground up
3. Sequence of muscle usage: Larger(stronger but slower muscles) to smaller (weaker but faster muscles)

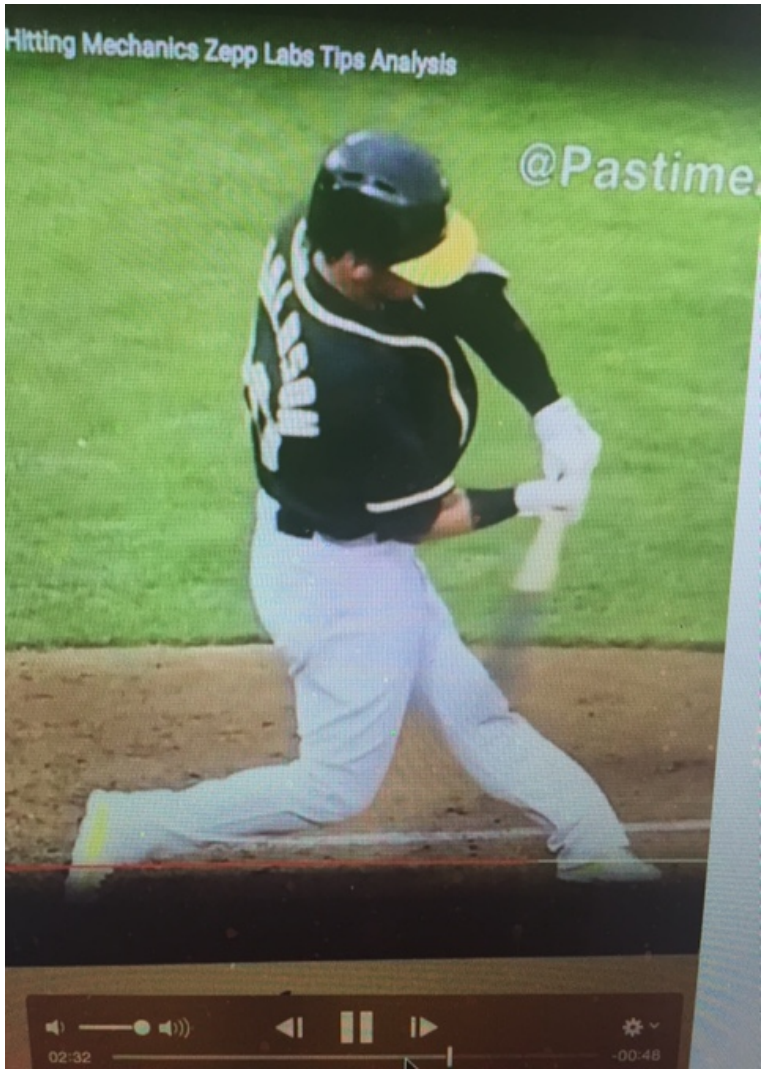


Sequence of muscle usage (which muscle goes when)



Examining the Baseball/Softball batter continued.

- 4. The rear foot action in the swing seems to be a composite of the three different throws
- 5. Bracing (blocking) of the non-throwing (or non-free turning) side
- 6. Separation of the Lower and upper body (connected to sequence of muscle usage.)

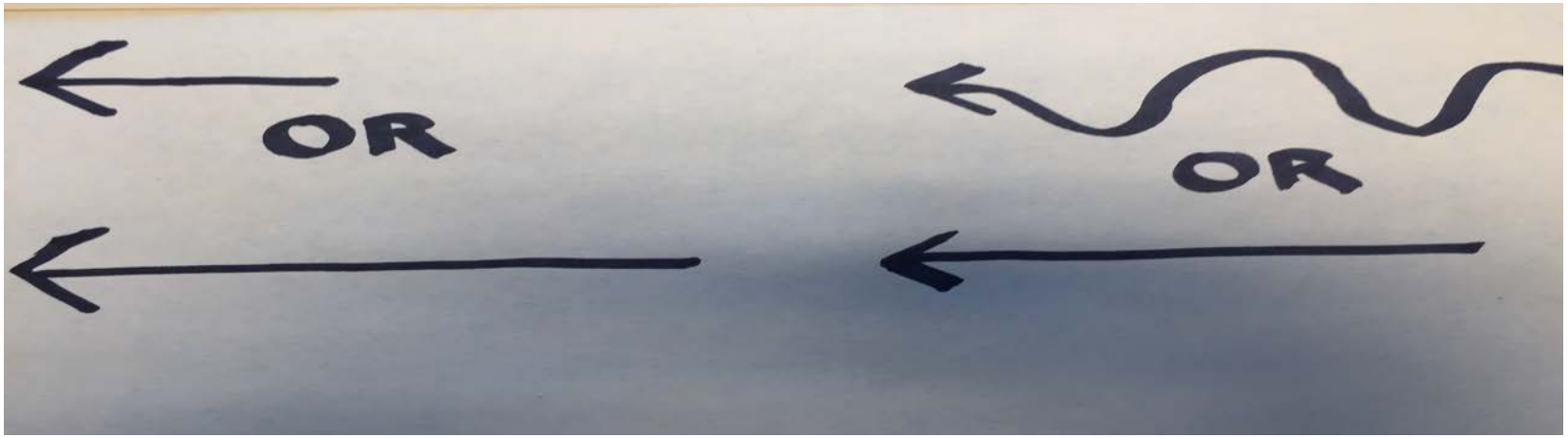


Another real world example: bicycle/sled

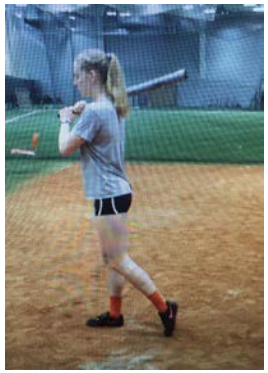
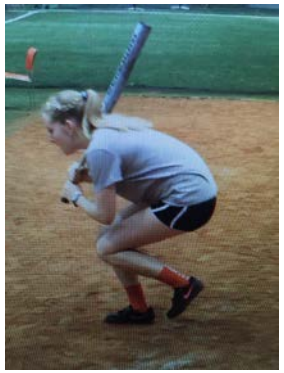
- length of acceleration/push
- straight line path advantage
- use of legs before arms

(Illustration as seen from above)

Length of push Directional path of the push



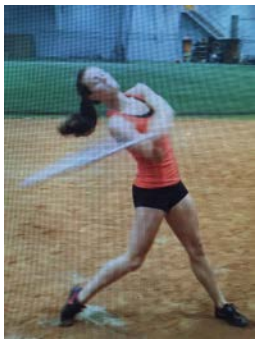
A shot put drill (which incidentally I invented.)

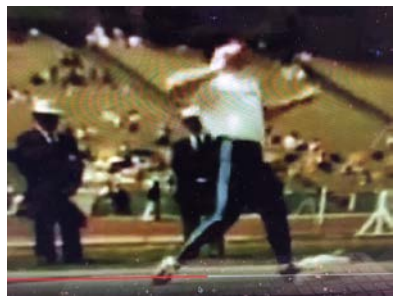












Teaching the shot

- Med ball prone toss with elbows out
- Standing two arm toss with bent legs
- Side toss with one arm push (introduce power position)
- Side toss with med ball resting on chair (Straight line concept)
- Sidewinder style shot throw with med ball
- Progress to glide with med ball or shot

Shot put progression continued

- Shot put grip and flicks progress to standing
- Bracing drills (wedge and pole.)
- Vertical hop positioning drill
- A-drill
- T start vs. drop and unseat
- Kick backwards—speed of implement (drill—kick back and baseball swing- start mechanics) Sidewinder style progression
- Action of the rear foot (difference from javelin)
- Teaching the reverse

Teaching Progression for Javelin

- Grip and power position
- Picking (for accuracy) “teach through the point”
- Longer standing picks stressing tapping front foot and blocking (elbow approximately shoulder height.) Imagine football quarterback—explain stretch reflex.
- Teach “rolling up,” with a javee or bicycle inner tube
- Three step walk-in throws
- Five step in-place march and hop with arm back (demonstrate)
- Walking five step (R-L-R___L-R) with jav or towel

Javelin progression continued

- (With or without baseball bat) 5 step crossovers, swing at the end
- Side skip, 3 side skips and swing, 3 side skips and a throw
- Cyclical portion of the run. Even or odd steps, 5-9 strides
- Cardinal rule of javelin approach methodology: <u>the athlete's approach shouldn't be longer than his or her throw.</u>
- Draw back on the last stride before the acyclical portion of the approach. Drill for draw back with cross bar
- Description of the rear foot throwing action (difference from the swing)

Teaching Progression for the Discus

- The grip, and bowling the discus, then flips.
- The act of “slinging” illustrated through the use of bike tires, grip Med balls, cones and 18 inch metal pipes
- Standing throws, description of the power position
- Linear drills (South Africans,) with tires or cones. Discuss orbit
- Pivot drill, and pivot drill throws.
- 5 step turnaround drill on grass field(continuous with throw.)
- Introduce rotational aspect of the discus turn
  - left arm action
  - center of mass path
- Inclination of body and pvc dry spin drills
- Placing towels on left side of the circle and near the back
- Sprint out drill
- South African or dry spin to baseball swing

Some thoughts on the right (throwing side) foot and left (blocking side) arm

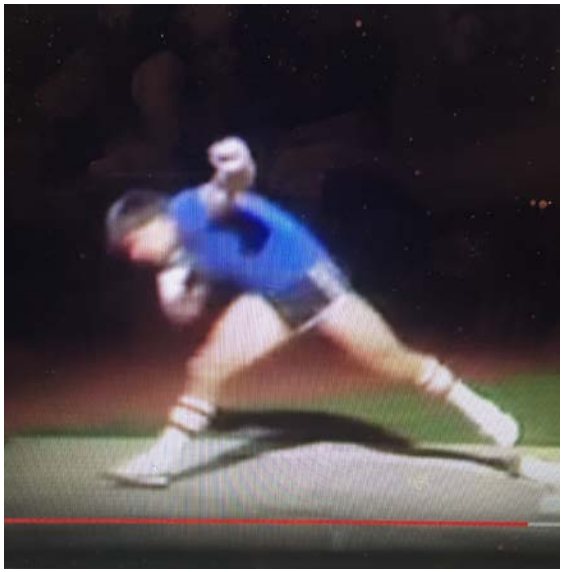
- Foot in the shot ("over inside-push-turn")
- Foot in the javelin (show the bottom of the boot to the back of the runway."
- Foot in the discus (this is most similar to the baseball swing.) Discussion of jump delivery and non-reverse, and delayed reverse
- Discussion of upper body and lower body rotational systems concept.
- Technical models. Look them up on video!:

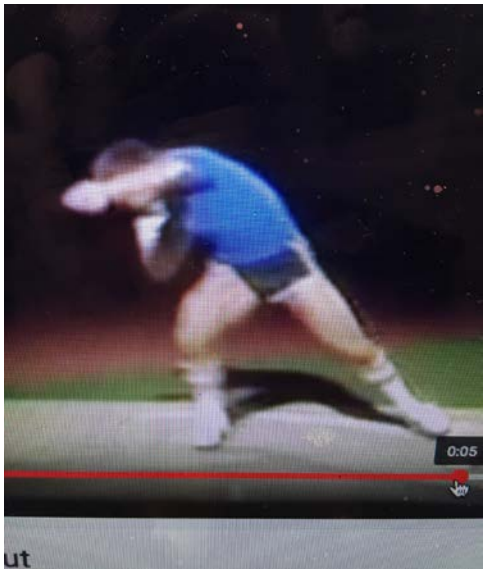
  Shot—Werner Gunthor (SWI)

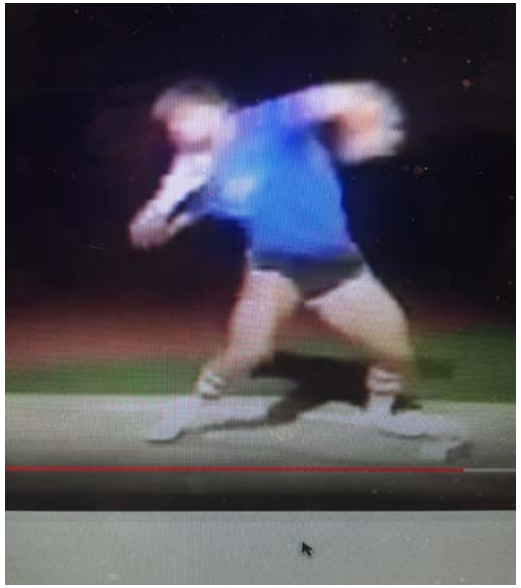
  Discus—Knut Hjeltnes (NOR)

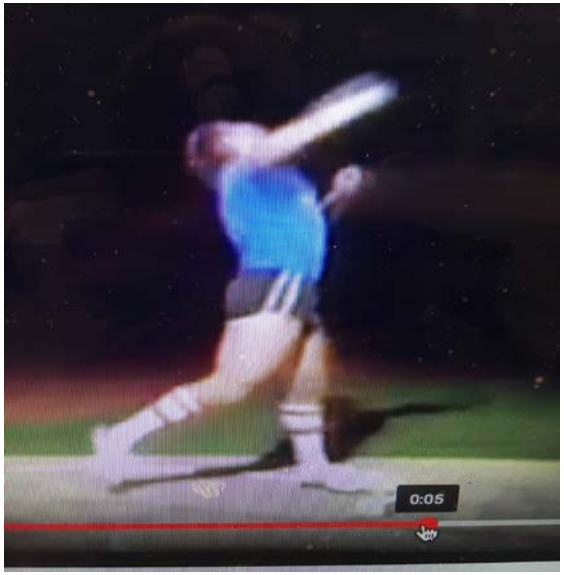
  Javelin—Andreas Thorkildsen (NOR)

Werner Gunther









Knut Hjeltnes






Andreas Thorkildsen






Questions?

Brian Mondschein

Princeton University

Track and Field

609-258-1231 W

609-480-6427 C

bm11@princeton.edu