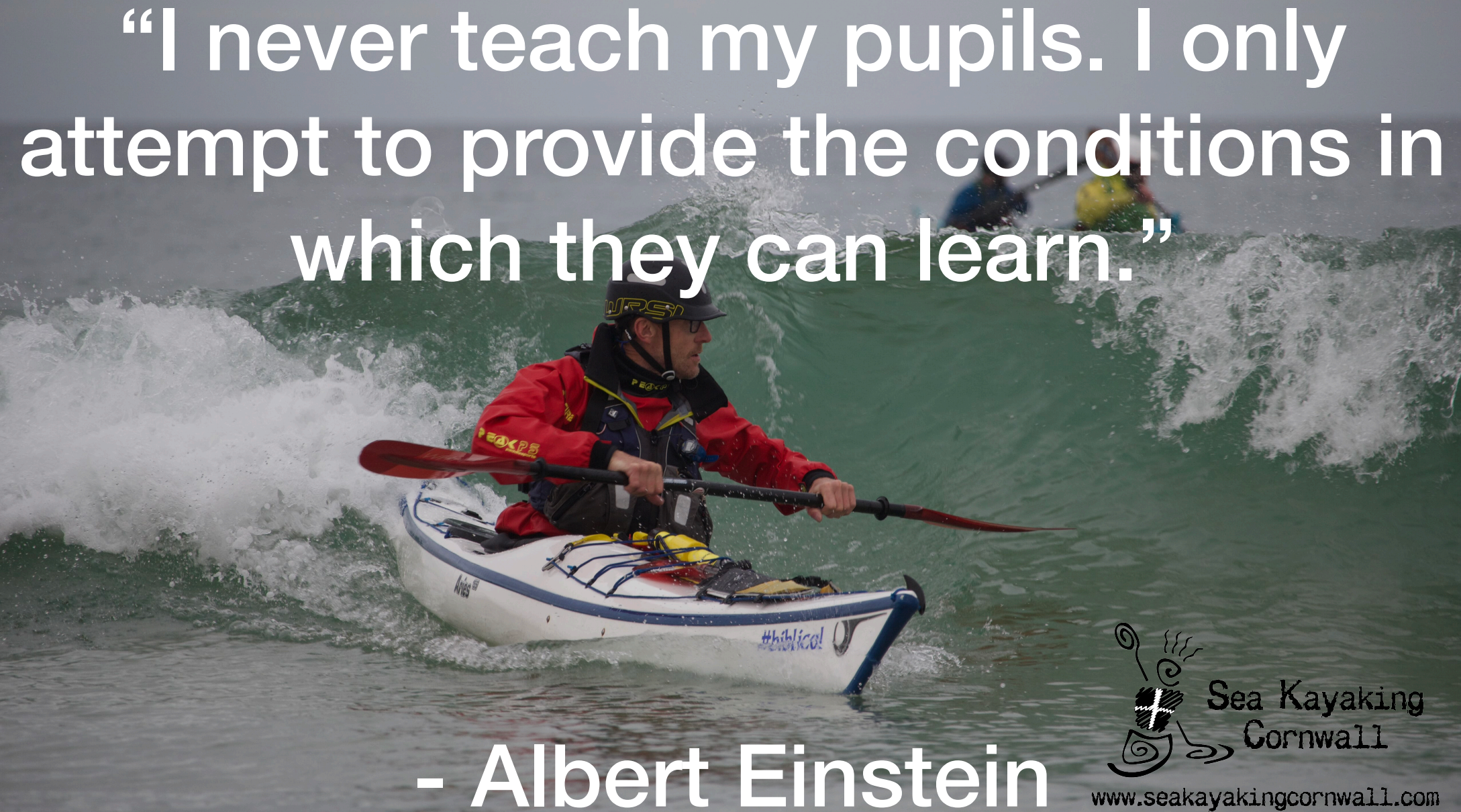
“I never teach my pupils. I only attempt to provide the conditions in which they can learn.”
- Albert Einstein
Sea Kayaking Cornwall
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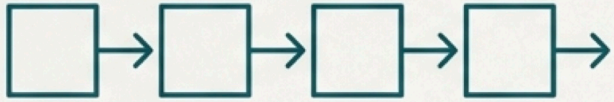
Our Coaching Models Must Evolve with the Environments We Face

The Traditional Approach



A task is broken down into manageable components, organized into a linear progression, and then gradually built up stage by stage.

Known as 'motor programming information processing' or 'chaining'.

The Problem: How well does this linear and structured approach prepare us for a world that is dynamic, changeable, and requires constant adaptation?

The Non-Linear Approach

Skills are not sequential. We must react to environmental disorder by recognizing relationships between component parts and understanding patterns.

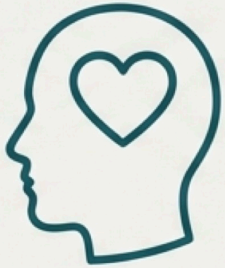
Analogy: Like a river, which has many interacting flows and obstructions but is still predictable with experience.

A Shift Towards a Constraints-Led Approach (CLA)

Instead of imposing the same learning process on everyone, we should identify the unique constraints influencing performance and support learners in developing *their* way to overcome them.

Allow the learner to explore and generate specific, functional movement solutions that wirt satisfy the unique combination of interacting constraints.

The Three Pillars of Performance Constraints



Individual Constraints

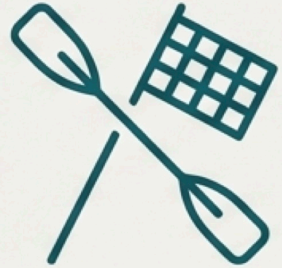
Structural: Physical aspects of the learner (size, shape, flexibility, fitness).

Functional/Behavioural: Psychological aspects (motivation, anxiety, confidence).

Environmental Constraints

Physical: Water, wind, terrain, tide.

Socio-cultural: Peer groups, expectations, culture.



Task Constraints

Activity: The goal to be achieved, degree of challenge.

Equipment: Suitability and familiarity with gear.

Adapted from Newell (1986).

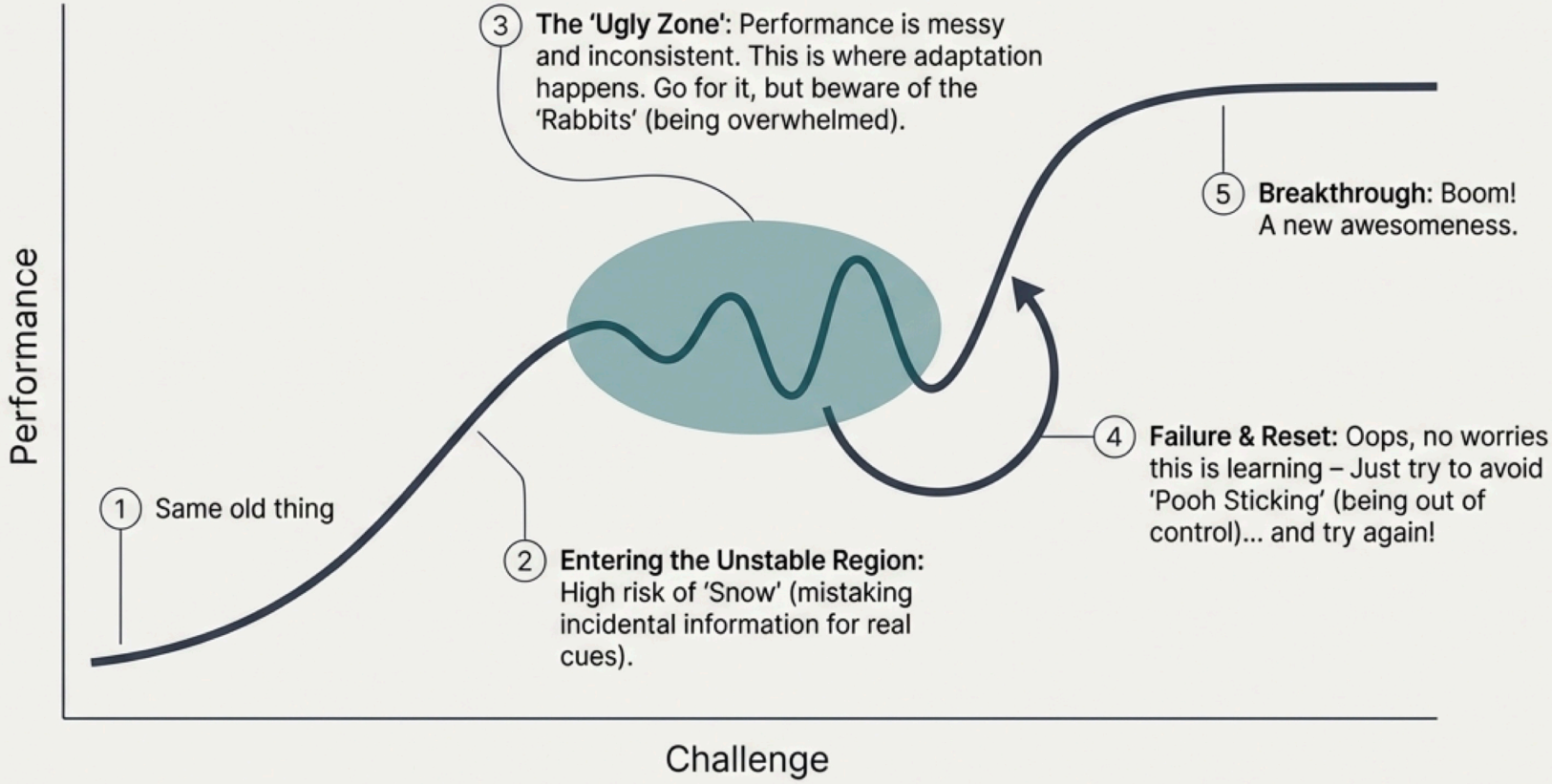
Real Learning Happens at the Edge of Your Ability

Skilled performers delight in engaging at the edges of their ability: trying, failing, trying again, failing again.

This is the **“Ugly Zone”**: the area just beyond your current ability where you try and fail, but try again with support and energy.

Sessions that look ‘ugly’ often lead to better retention and skill transfer than sessions where performance looks perfect.

The Dynamics Learning (Ugly) Curve



Davies & Davies (2019)

Navigating the Ugly Zone: A Coach's Field Guide

Snow: When the practice environment includes incidental information that a learner mistakes as relevant. (e.g., mistaking a correlation for causation).

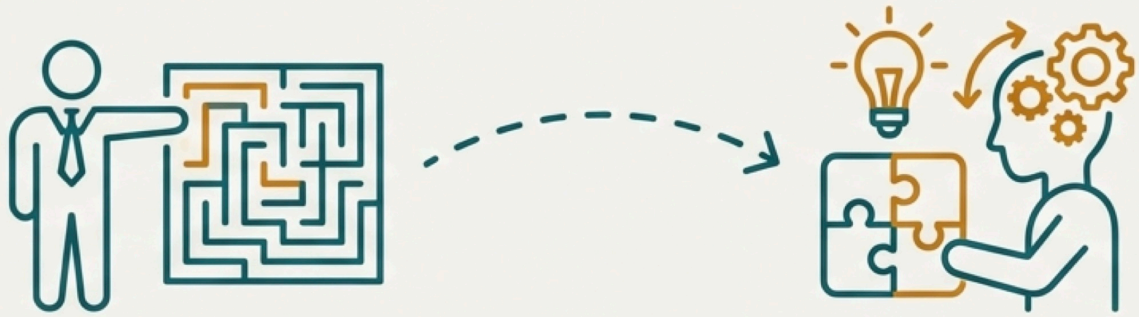
Rabbits: Unnecessary anxiety, stress, or social pressure that fills the "play and exploration" space, leaving no room for learning.

Pooh Sticking: When a learner succeeds but doesn't know what actually worked or was not in control. Occurs when the challenge is too far beyond their current ability.

Handrails: Information from the coach (a cue, a question) that helps highlight a key aspect of the challenge without giving away the answer.

Handcuffs: Information (usually rigid technical templates) that constrains learning and disrupts natural movement exploration.

Your Role is Not to Provide Answers, But to Design Better Problems



Who is doing the thinking?

The goal is to ensure the ***learner*** is developing their **own** thinking and understanding. With your help, they should be able to anticipate and perceive what they need to adapt when a constraint changes.

The learner can confidently state: “If I do ‘x’, then ‘y’ will happen.”
They understand the link between the constraints and their performance.

Manipulating Constraints in Practice: Forward Paddling

Instead of 'deconstructing' a skill, we 'simplify' it by doing the whole skill in an achievable way. Then we progressively add challenge by manipulating constraints.

Manipulating the Individual

Change arousal state. Practice in shallow water, then deep water. Paddle with eyes open, then then eyes closed.

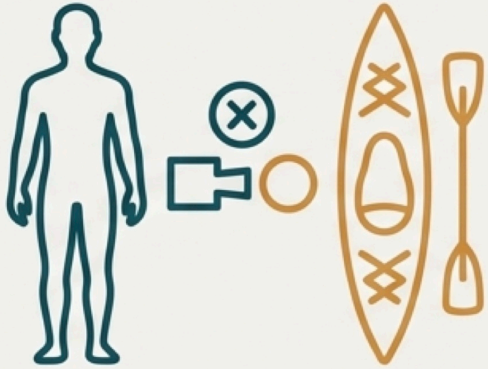
Manipulating the Environment

Start in sheltered water. Then add a slight headwind. Then a crosswind. Then waves.

Manipulating the Task

Paddle a straight line for a short distance. Then a longer distance. Then faster. Then slower. Then with minimum strokes.

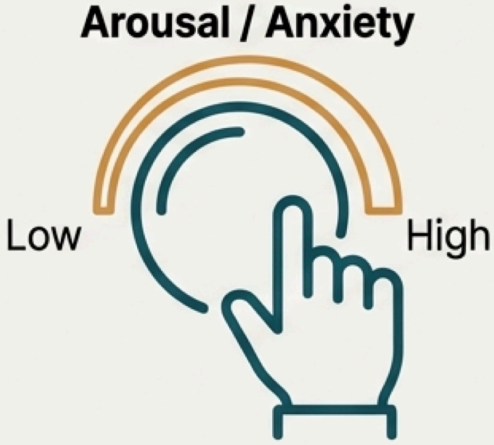
Shaping the Individual: Mind and Body



Structural Constraints

Size, shape, flexibility, fitness.

Coach's Role: We can't manipulate these directly in a session, but we must check they are not a limiting factor (e.g., a small person in a boat that is too big).



Behavioural Constraints

Motivation, anxiety, focus.

Coach's Role: We *can* manipulate these.

- **To decrease anxiety:** Make it less 'scary' (e.g., start in a calm, controlled environment).
- **To increase challenge/focus:** Make it a bit more 'scary' (e.g., introduce a new variable once they are comfortable).

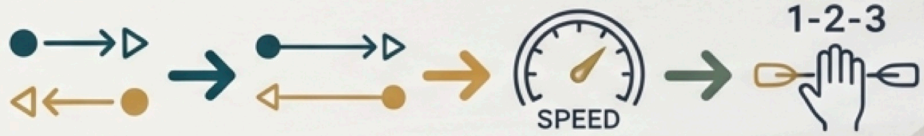
Shaping the Challenge: Environment and Task

The learner practices the same core skill but must continually adapt the *whole* of it to achieve the outcome, shaping it for adaptability.

Environmental Manipulation in Action

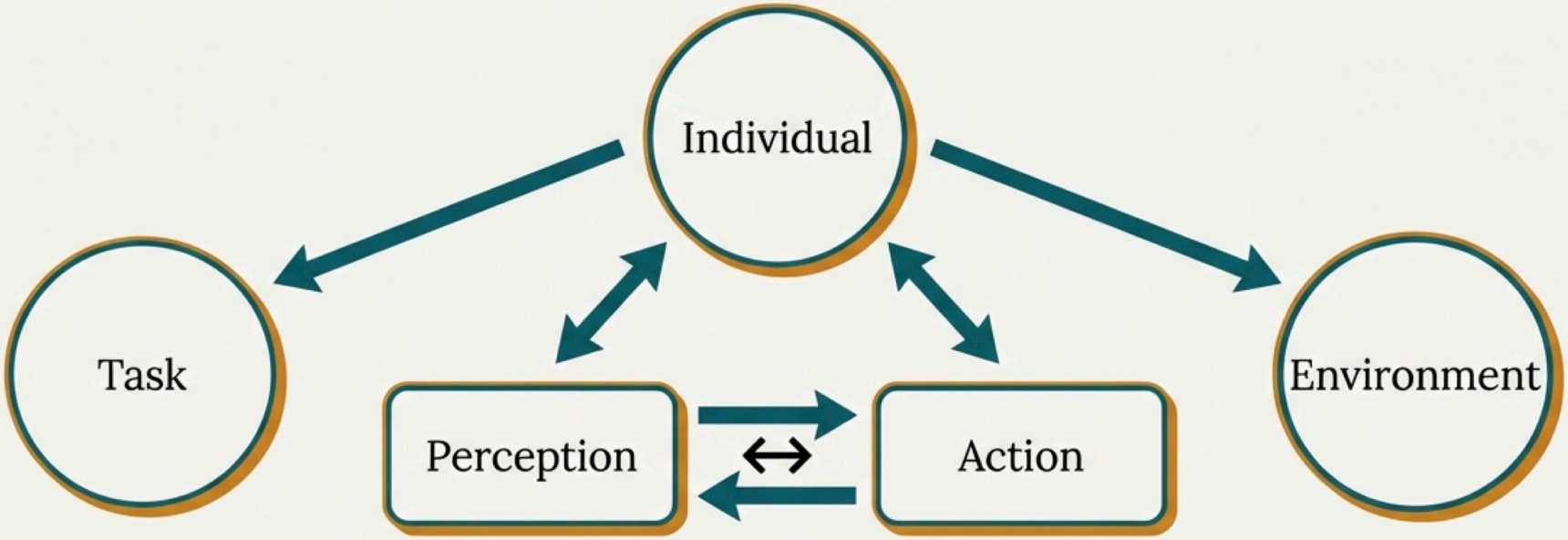
The environment presents the problem. The paddler must adjust their stroke, trim, and timing to maintain a straight line.

Task Manipulation in Action



The task defines the goal. The paddler must find new efficiencies and power applications to meet the new goal.

The Perception-Action Loop: A Model for Coaching



These three constraints constantly interact to shape how a learner perceives their environment and, in turn, how they act within it. Your job as a coach is to be the architect of this interaction.

(Adapted from Newell, 1986)

A Fundamental Shift in Practice

~~"Break skills down into parts."~~

"Learn to shape the whole skill."

By manipulating constraints, you develop skill in an individualized way that exposes the learner to the need to make adaptations, building true understanding and resilience.


Your job is not to teach.
It is to create the conditions for learning.
Embrace the Ugly Zone.
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