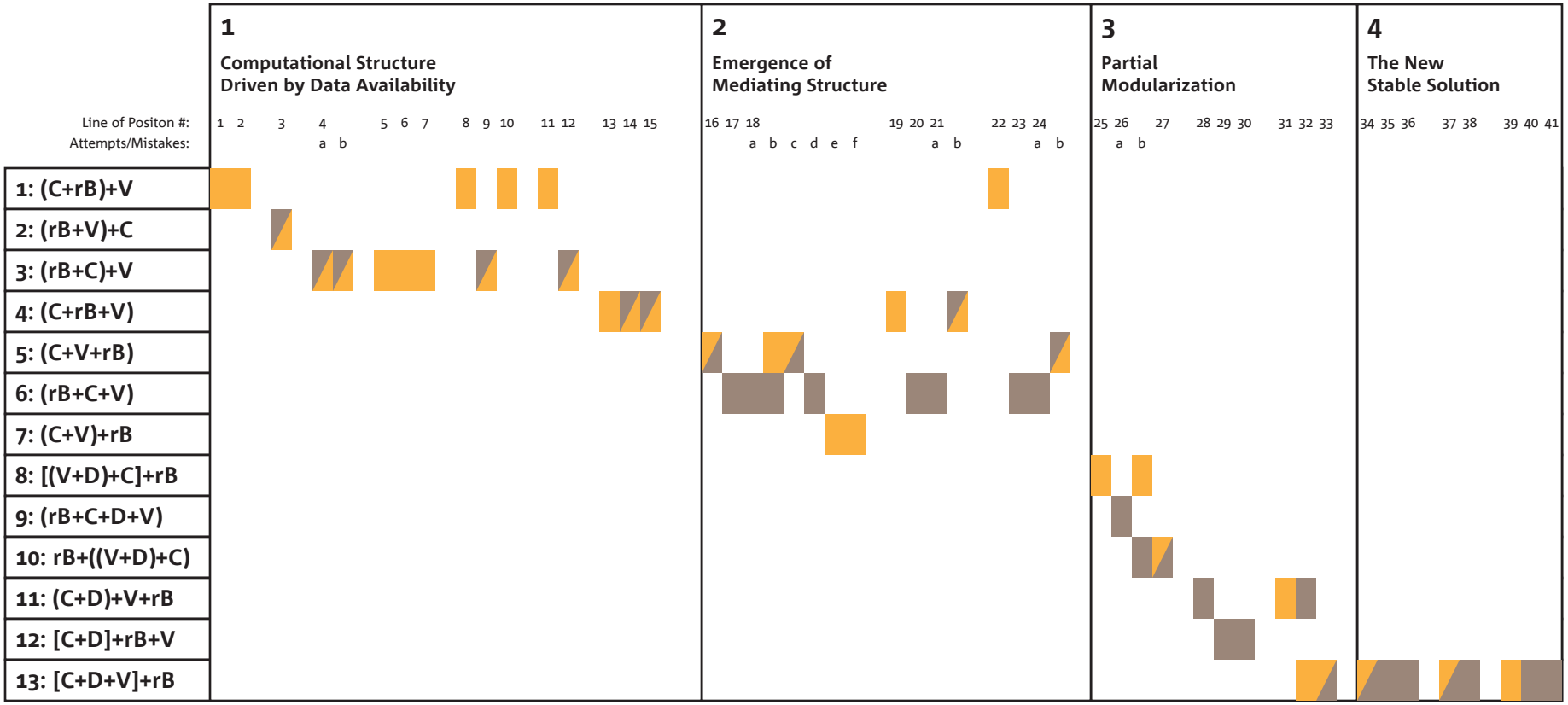
Dividing Labour Under Pressure: *Cognition in the Wild*, Chapter 8



The *USS Palau** has lost power and is careening out of control into San Diego harbour. The engine failure has knocked out the gyrocompass, the principal tool of the navigation team. The team must fix the position of the ship *every minute* to keep it out of danger, using three intersecting lines of position (indexed by the horizontal numbers above) from bearings taken from landmarks on the shore, and reconciled with the backup magnetic compass.

The problem these sailors have to solve is one of simple modulo arithmetic, adding and subtracting degrees of a circle (left column). The plotter (in charge) and the bearing recorder (receiving the readings) are under pressure to negotiate the best way to split the task of adding the numbers, *and in what order*, to fix sets of three lines of position onto the navigational chart. It takes them *32 tries*.

This riveting example shows just how hard it is to divide even a simple, well-defined task.

rB: Relative bearing
C: Magnetic compass heading
V: Variation (from true North)
D: Deviation (compass error)
(): Use of calculator
[]: Spoken as intermediate sum

Computation led by the plotter
Computation led by the bearing recorder
Started by plotter, finished by recorder
Started by recorder, finished by plotter

(*Fictional name ascribed to a real amphibious warfare vessel, basically a small aircraft carrier.)

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