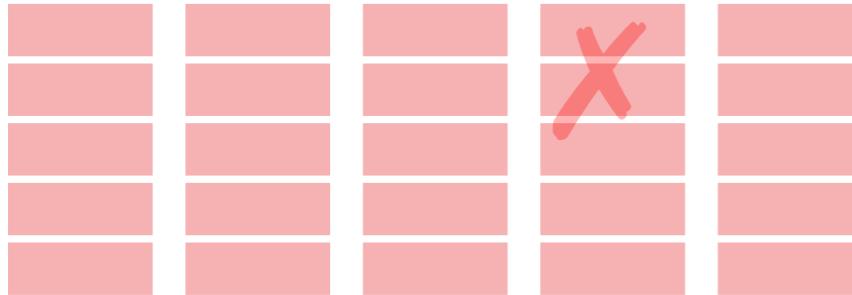


**FIGURE 11: Mechanistic Explanation**  
**Frozen Backbone + Low-Rank Constraint = Catastrophic Forgetting Prevention**

**Full Fine-tuning**

All 110M parameters trainable



**Large arbitrary updates**

**Destructive Interference**

**LoRA (99.7% Frozen)**

Frozen backbone + low-rank adapters



**Constrained updates**

**Protected Knowledge**