

~~Safe Mooring Operations~~

A functional approach to normal work

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Disclaimer

The risk management of everything

The views expressed in this paper may not necessarily represent the views of the organisation that I represent

An unfortunate departure

Just-in-time

Last minute challenges

Cargo, gangway, ballast, lashings

Bridge dynamics

The Master's deadline and the pilot's KPIs

Single up, make fast tug

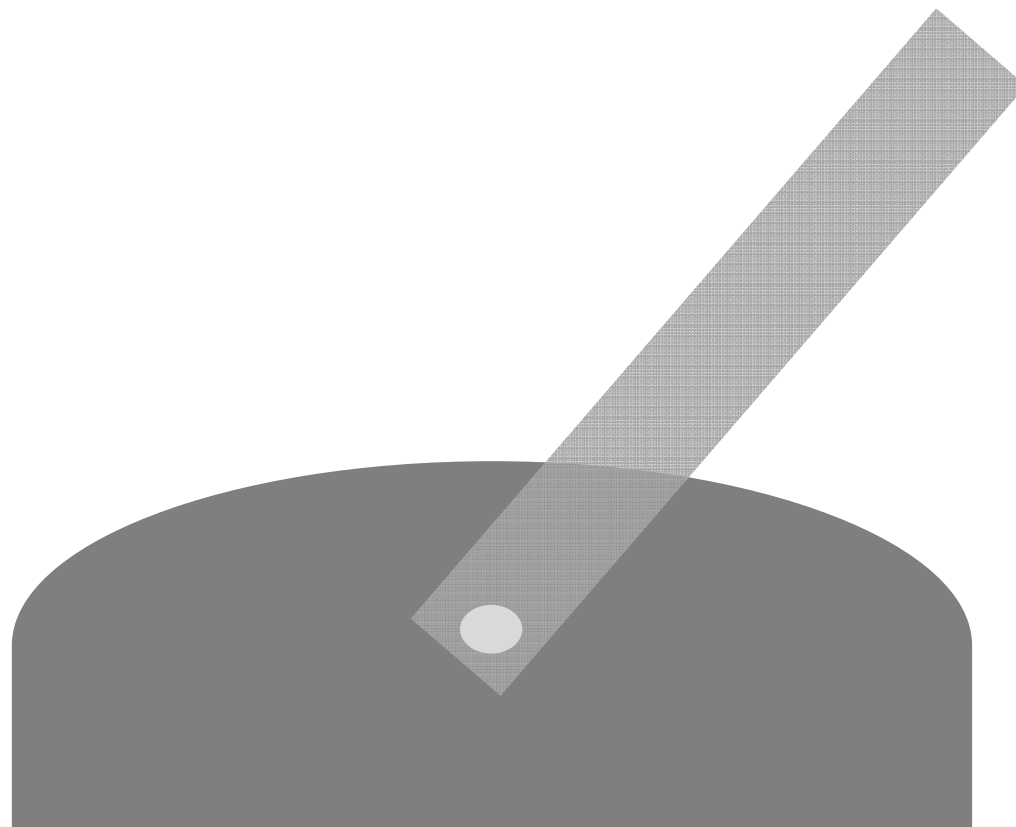


Jonard & Max

I go single up, you go make fast tug

It has always worked
and so it should!

**DO NOT LEAVE
UNATTENDED!**





We can't fix the stupid

Fundamental attribution error

Hazard, risk, unsafe

... or just normal people doing normal work

Equivalence

Things go wrong and right for same reason

What mostly goes right

... can sometimes go **wrong!**

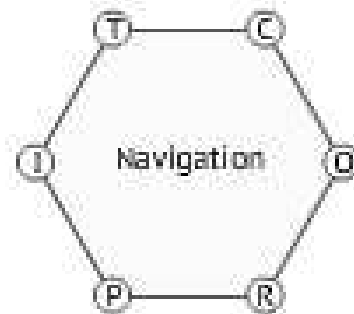
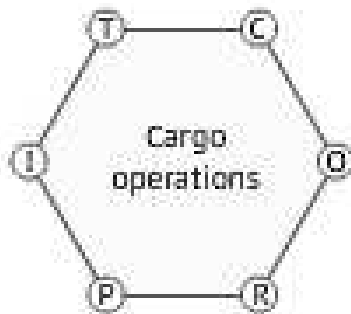
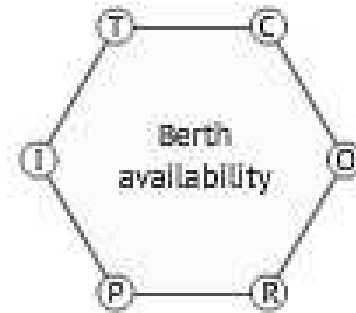
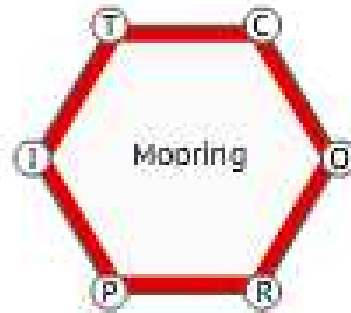
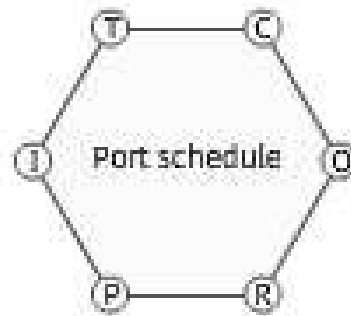
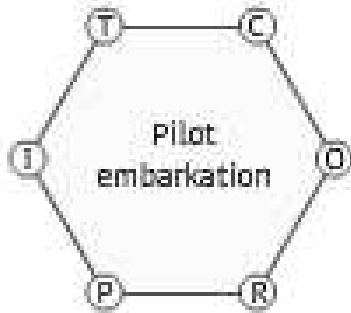
The usual and the normal

Method and Language

Safe mooring
... a functional
operations
approach to normal
work

Why functional?

Context, purpose and interdependencies



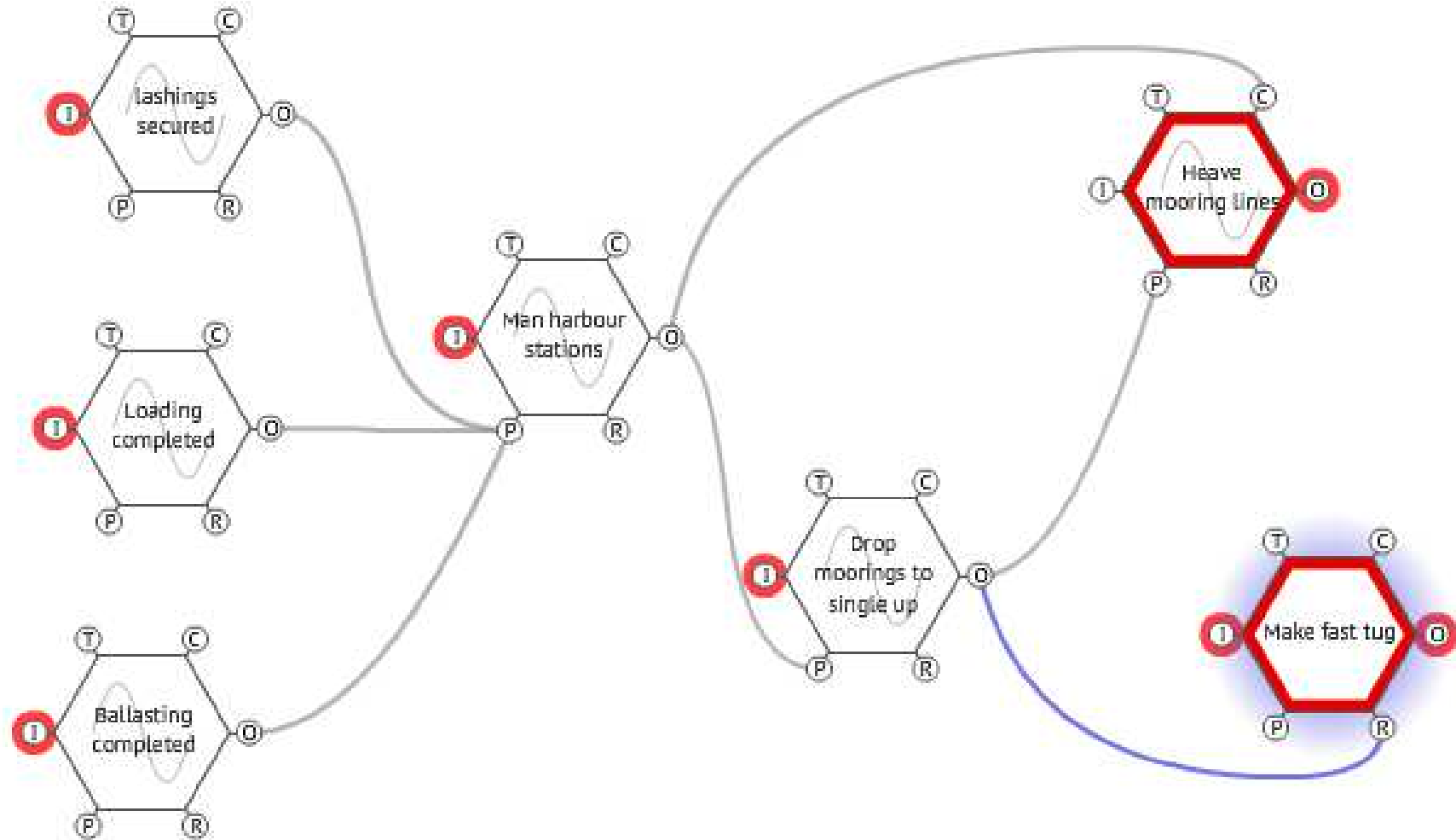
Supply chain network

The wider purpose

The method

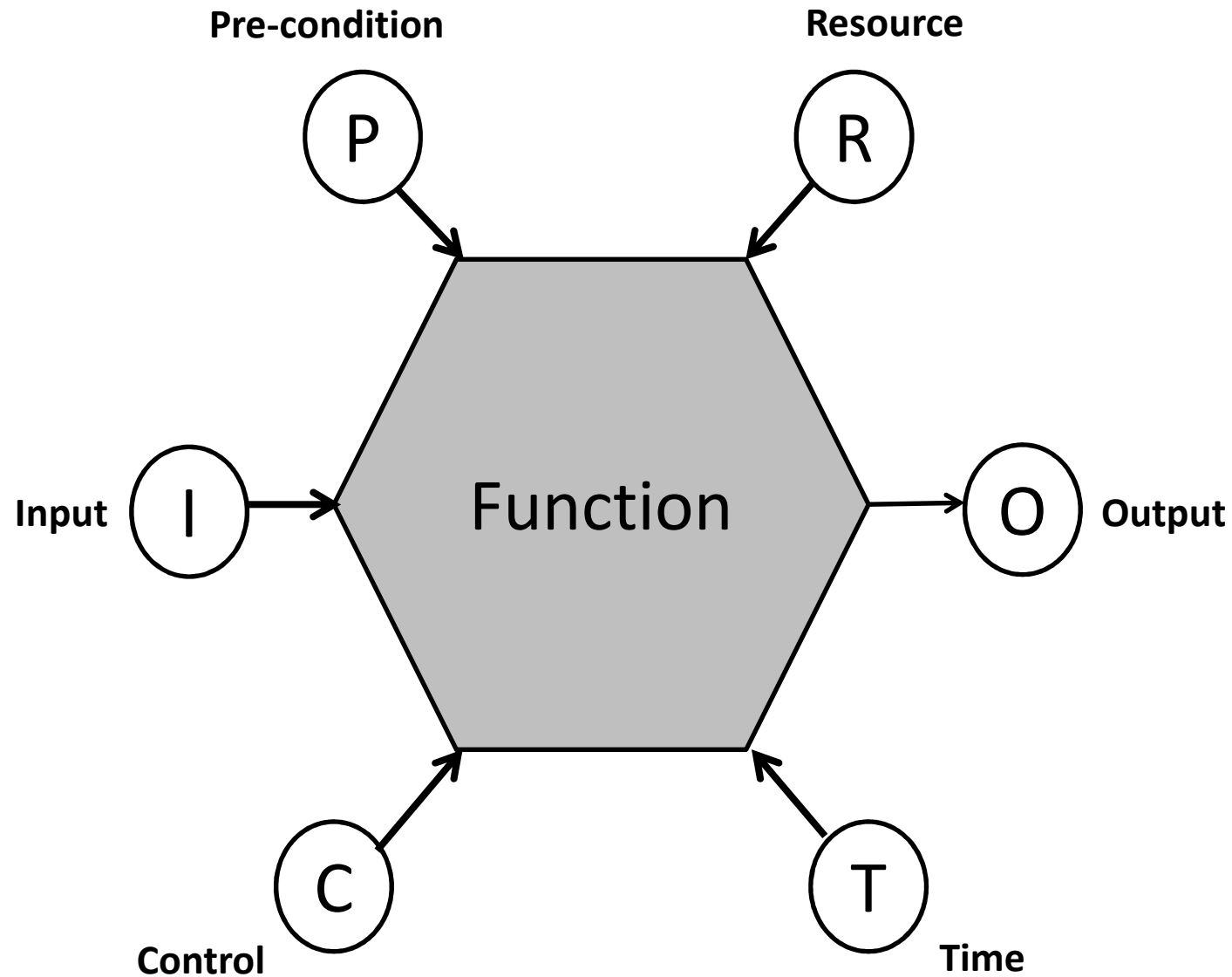
Functional resonance analysis

The FRAM model



What is a function?

A typical function



Input

starts the function



Resource

required for carrying out the function



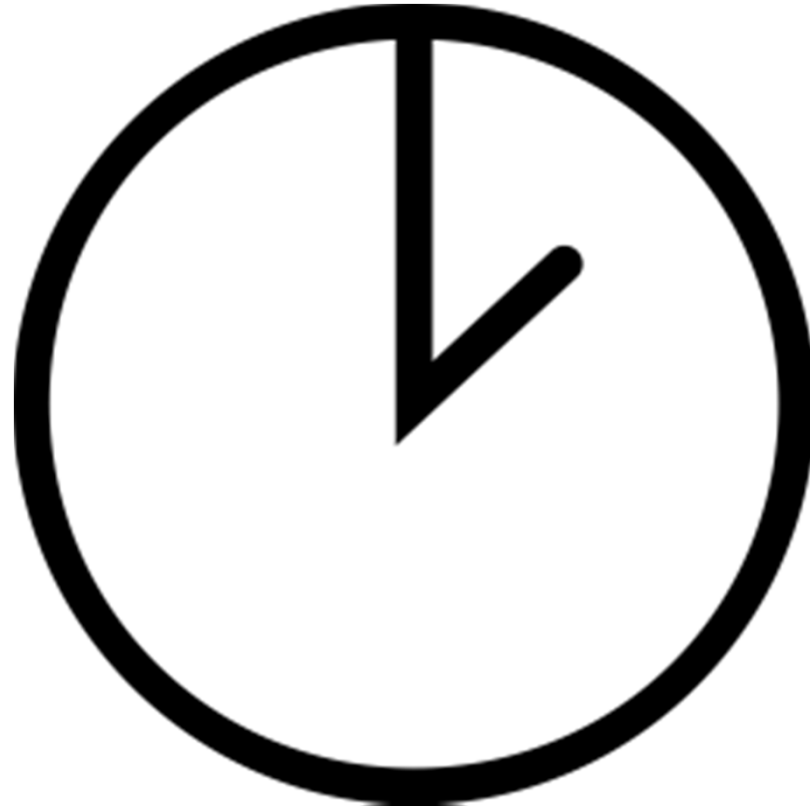
Pre-condition

must be met before the start of the function



Time

required for completing the function



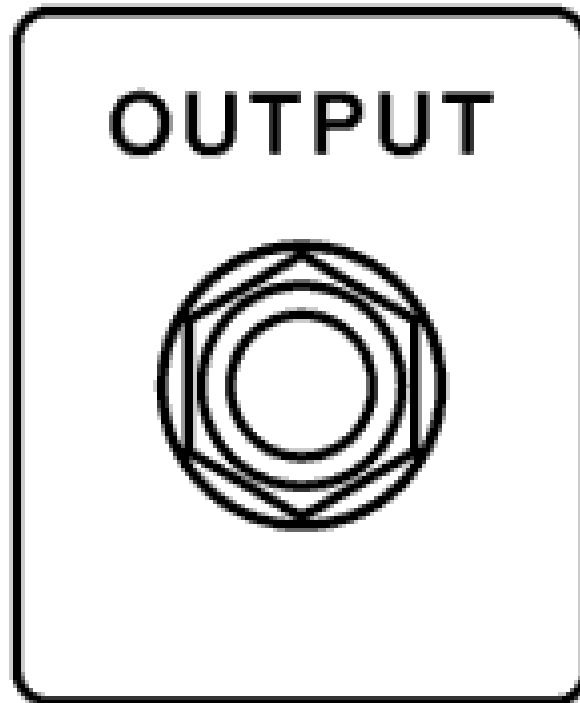
Control

monitoring and intervening during the function

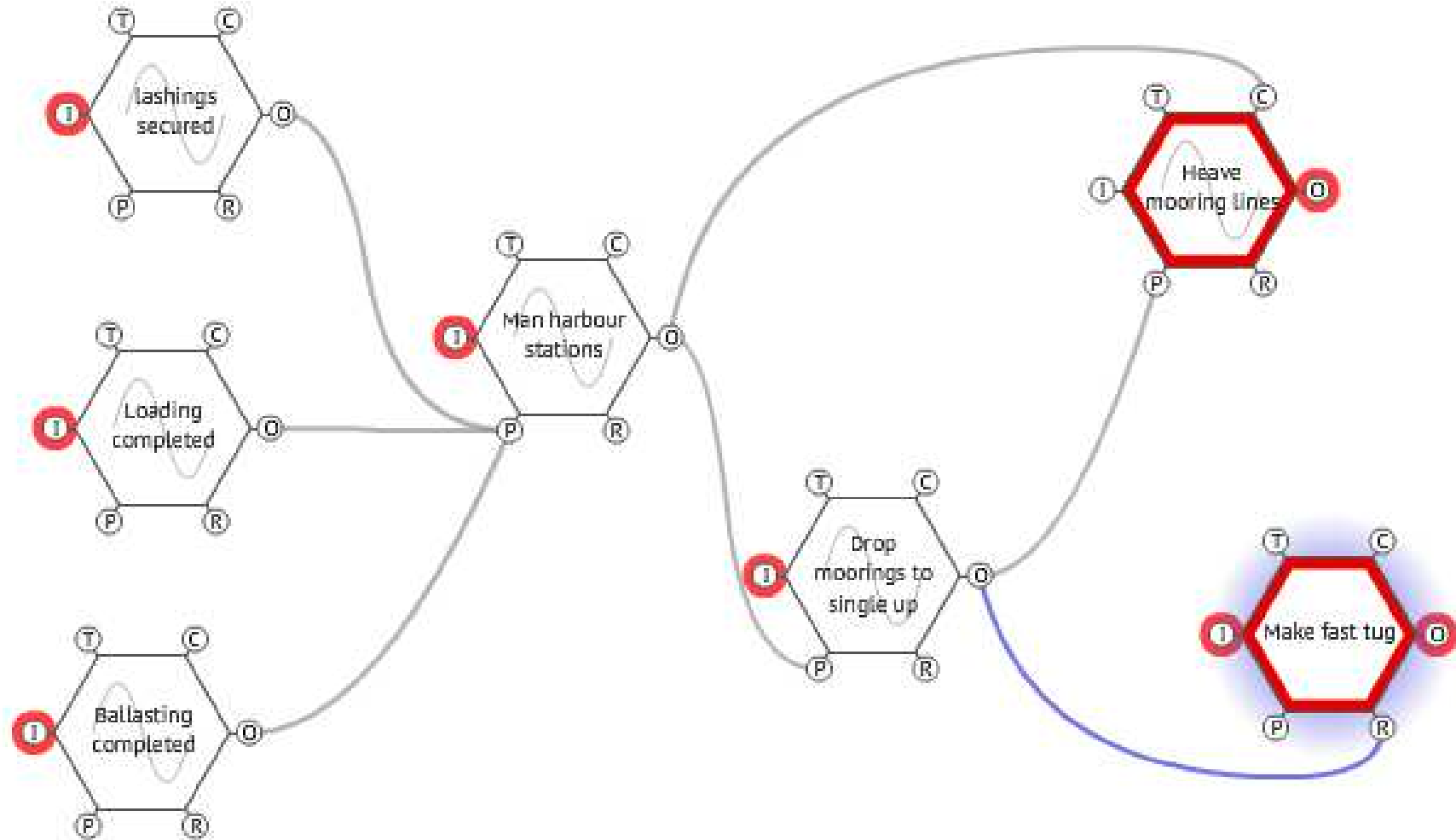


Output

the end goal of the function



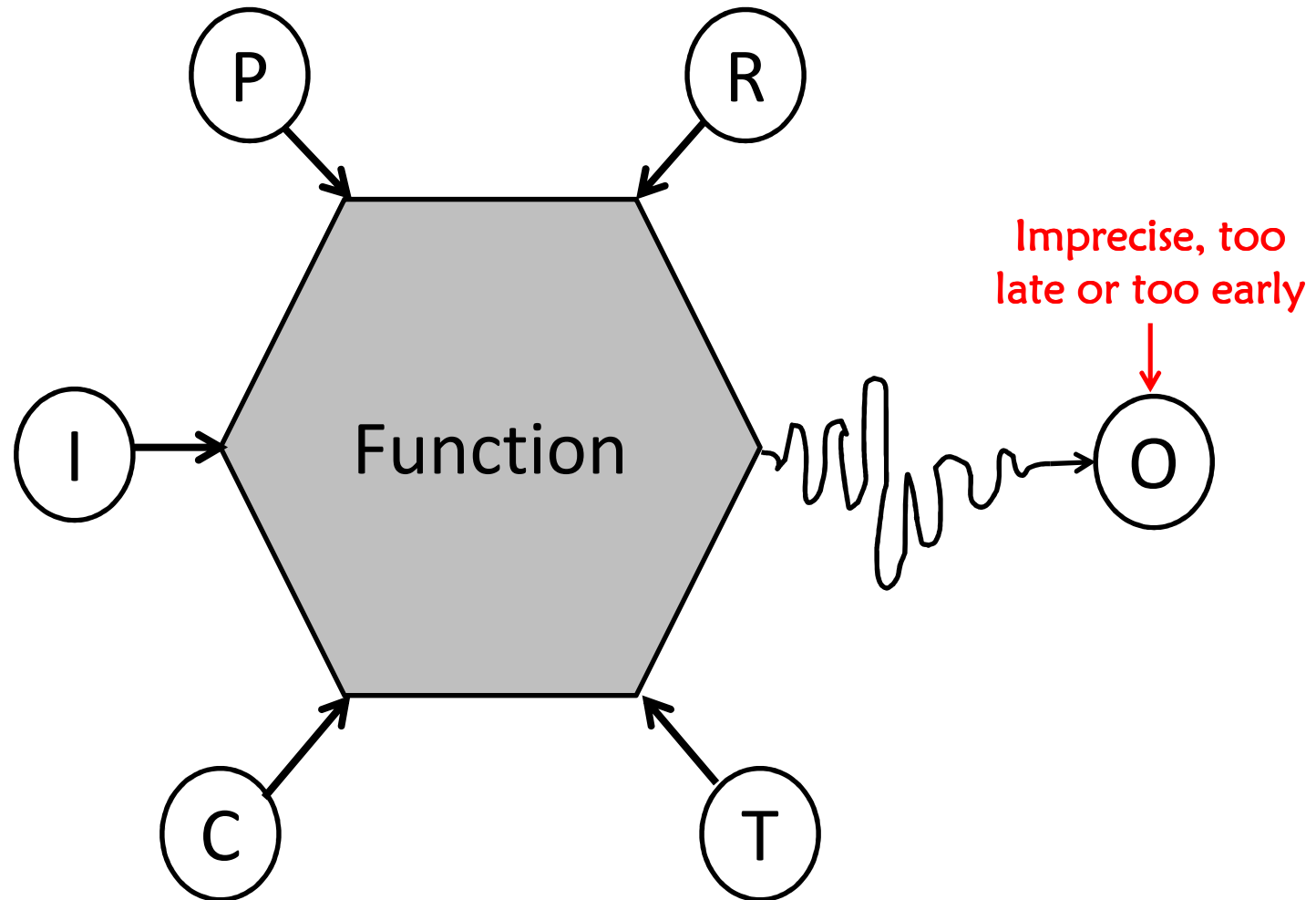
The FRAM model



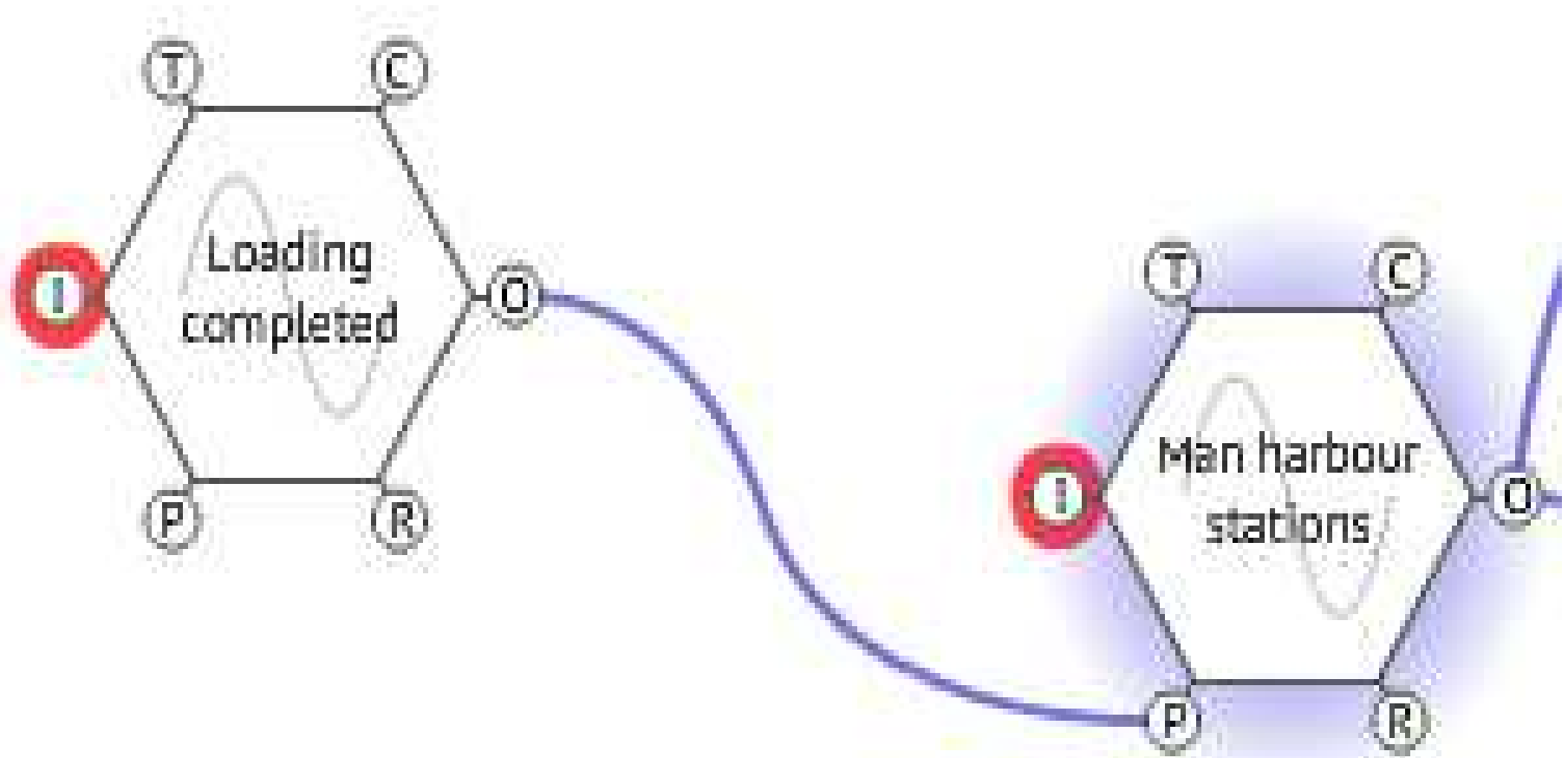
What concerns us?

Output and interaction

Output of function



Functional interactions



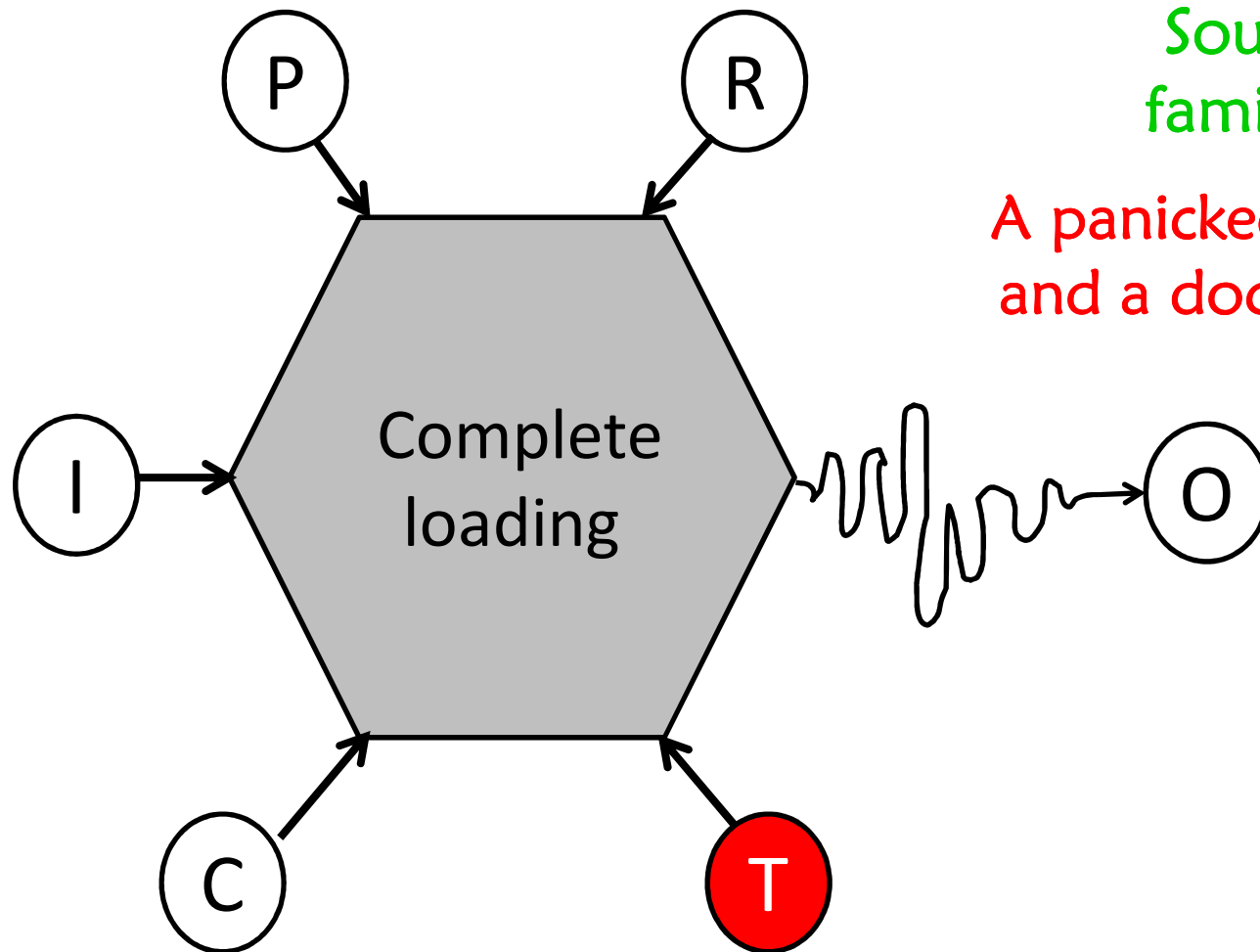
Revisiting the case

Understanding what's going on

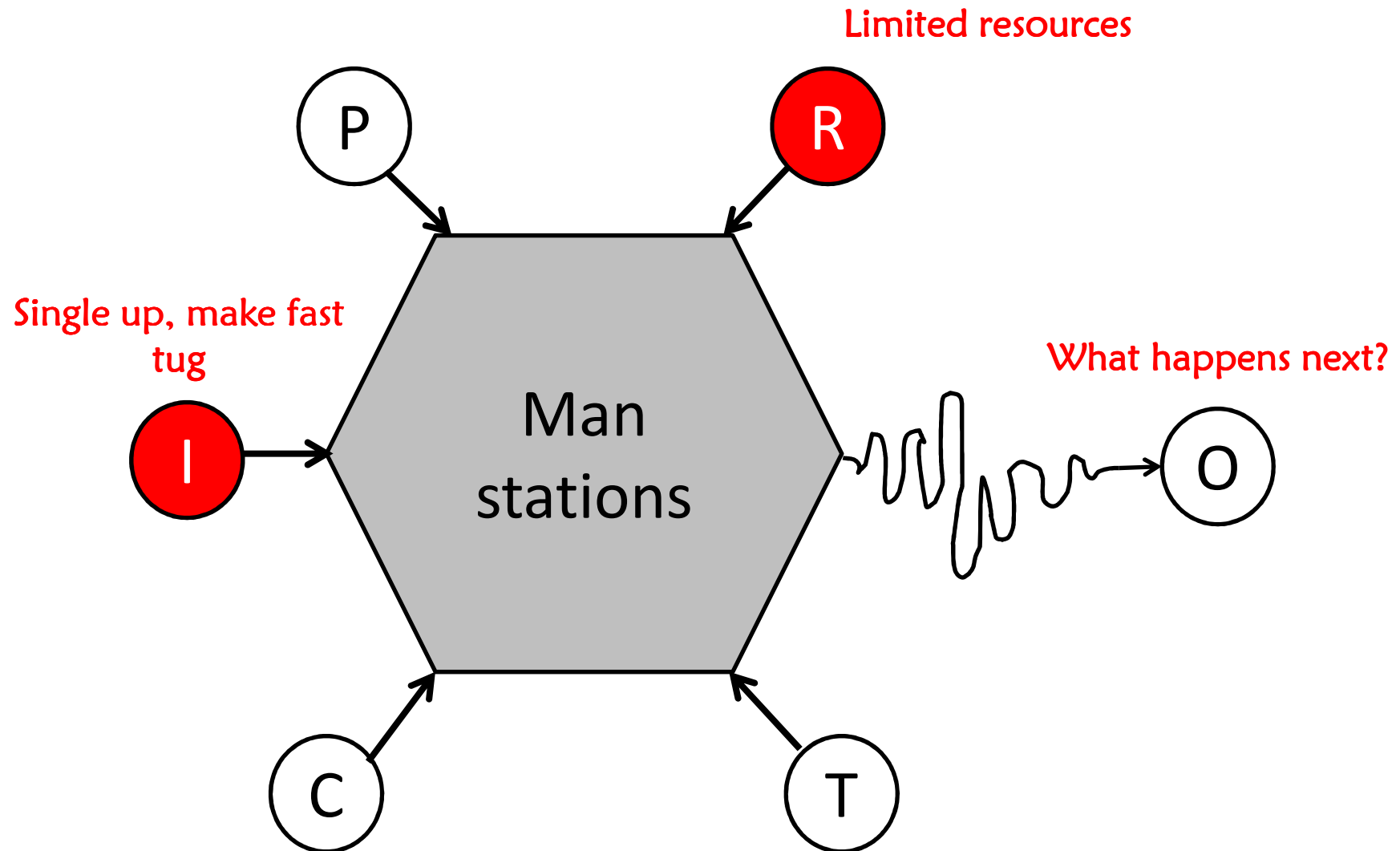
Production pressures

influence blood pressure (and testosterone!)

Production pressures



Too many inputs



Seamanship

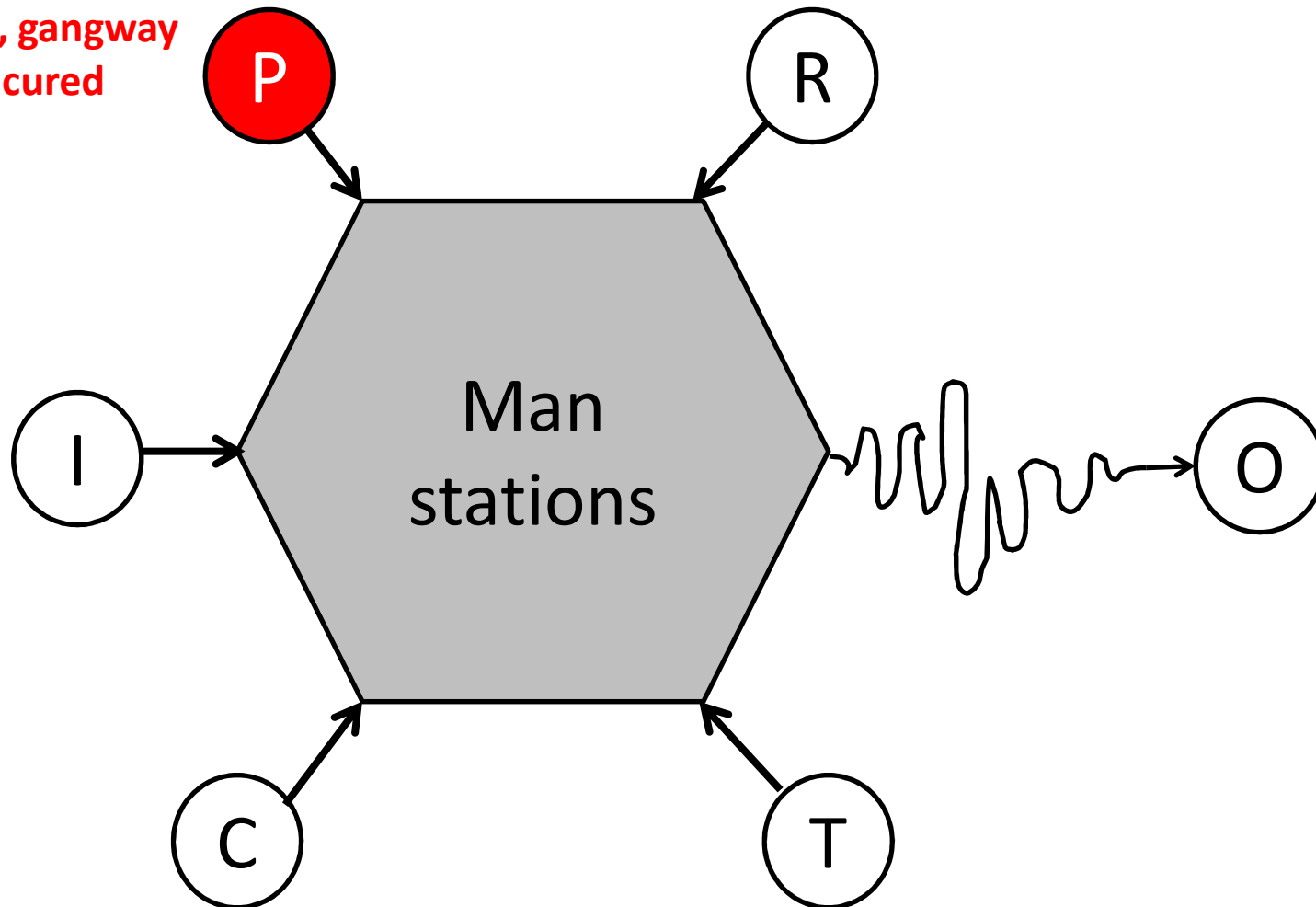




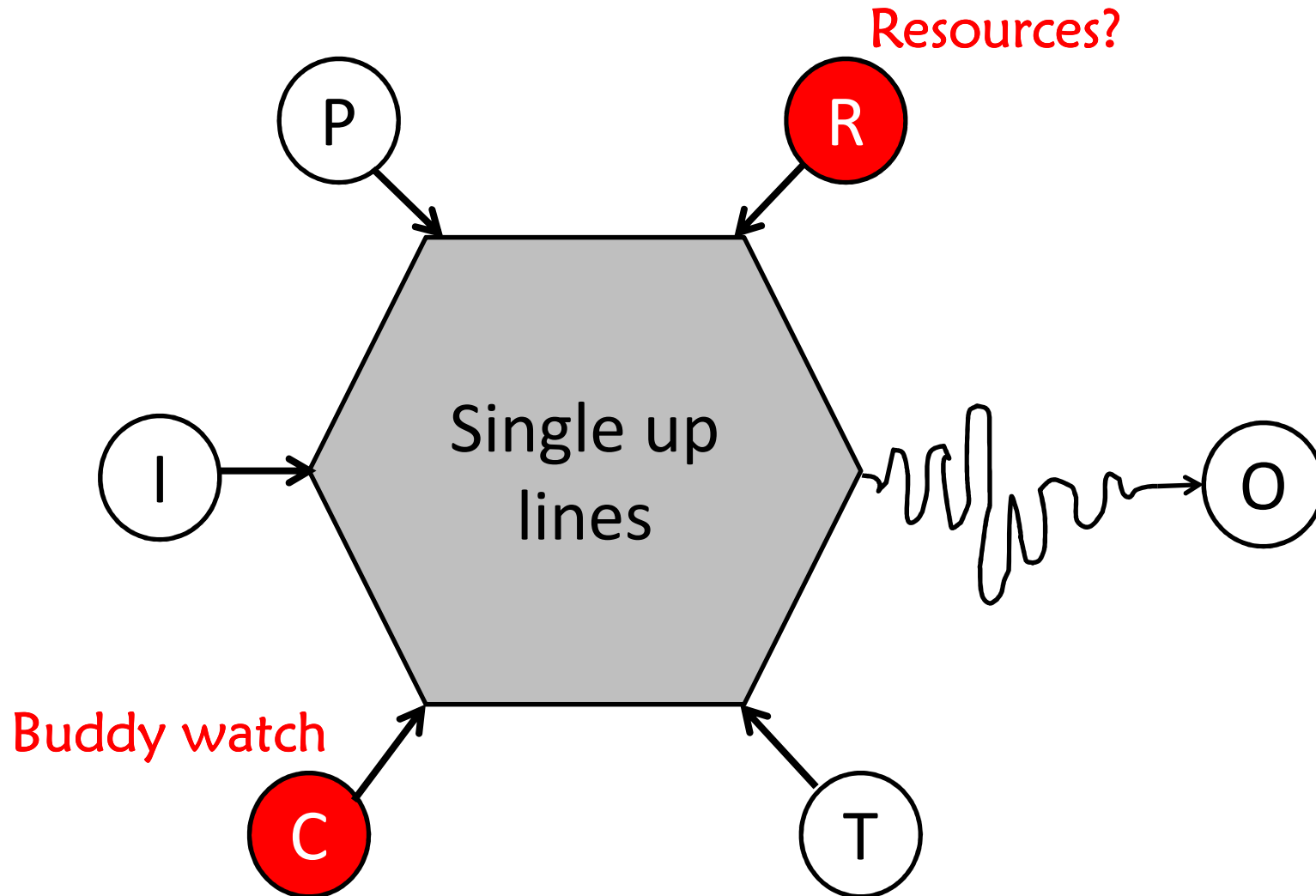
Source: UK P&I Club Mooring Incidents

Pre-conditions not met

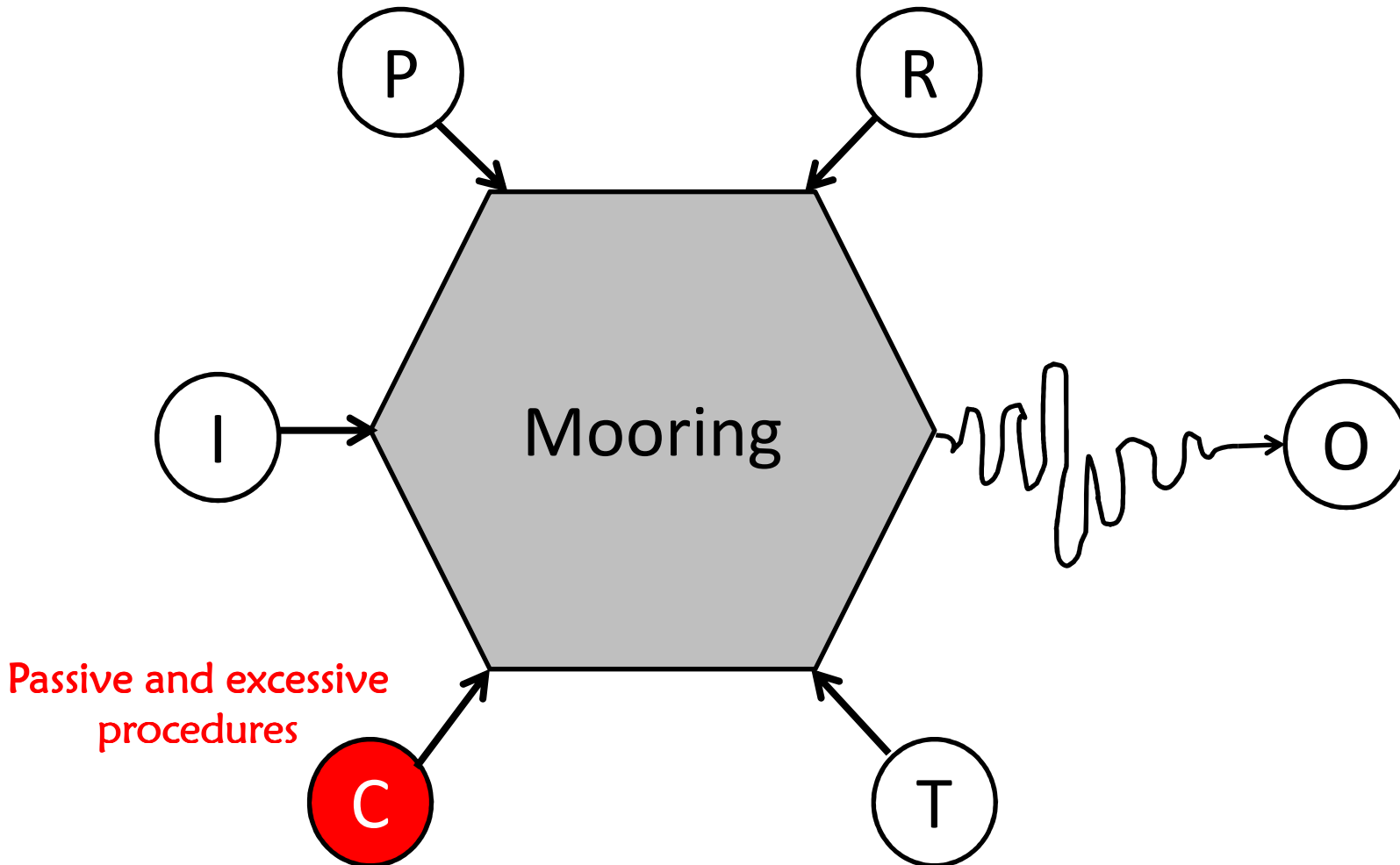
Lashings, cargo ops
underway, gangway
not secured



Resource versus control



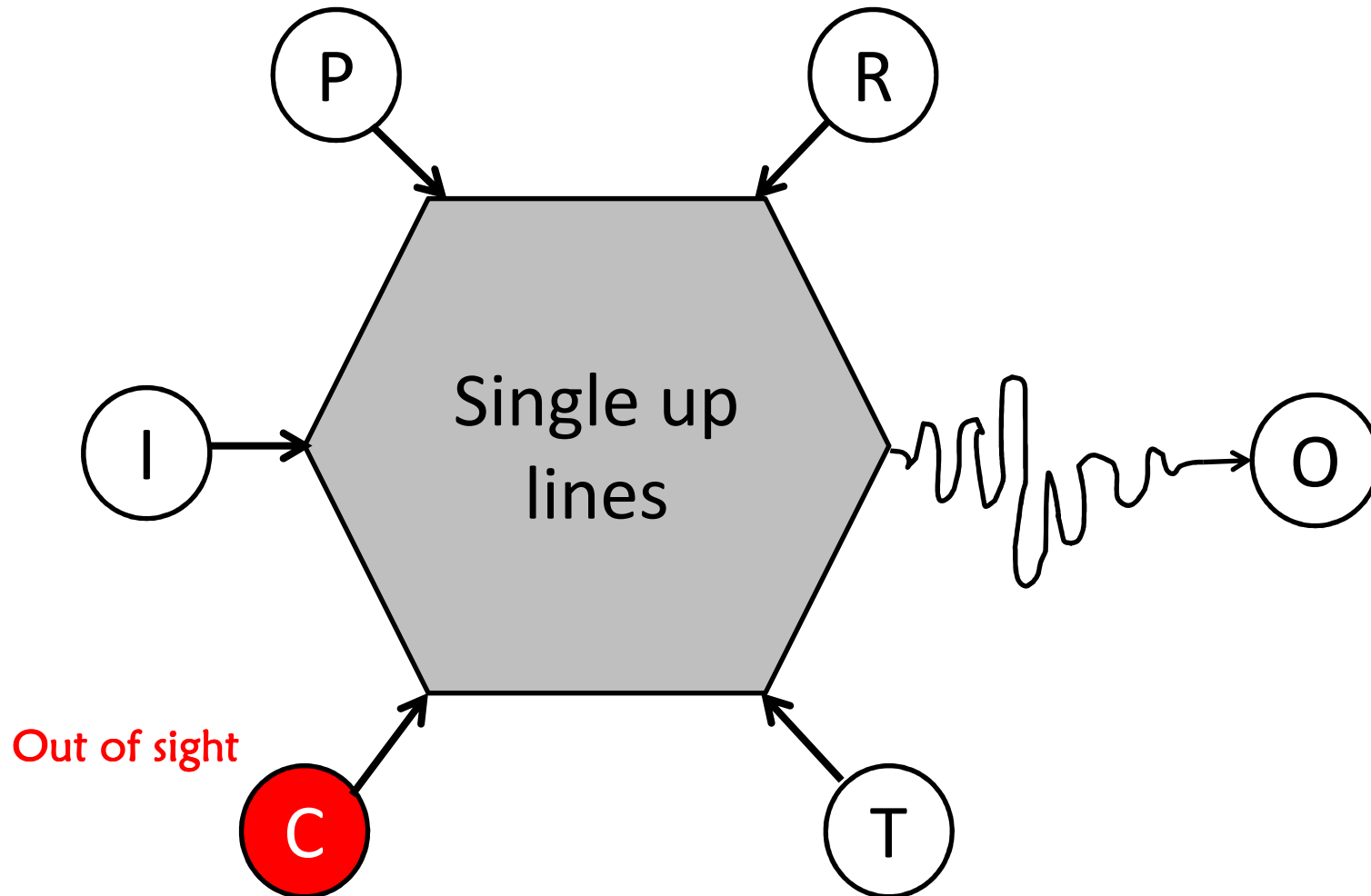
Effective control?



Rule violations

Really?

Effective control?



The way forward ...

How things go right

Not what goes wrong

Mooring as operation?

Narrow view: snap-back, tensions, trip hazards

Mooring as function

System: wider interdependencies and purpose

Safety by design

Effective controls

Communication styles

One input at a time

Single up & then make fast tug



Functional interfaces

“Secure gangway before you go for stations”

Active intervention

Effective controls

Buddy watching, team pairing

Effective controls

Clear line of sight

More than mooring

Enclosed spaces, navigation, lifting etc.

Backwards & Forward

Incident investigations, PTW & risk assessments

Mooring as a function!

Not isolated operation

Understand the normal

not accidents and near misses, why?

Because ...

When something goes wrong, it has usually gone well many, many times before. That is why people do it. So without understanding why it was done in this way and why it went well, we have no hope of understanding why it went wrong. (Anand 2016)

Business is safety

improving efficiency and safety (together)

Thank you