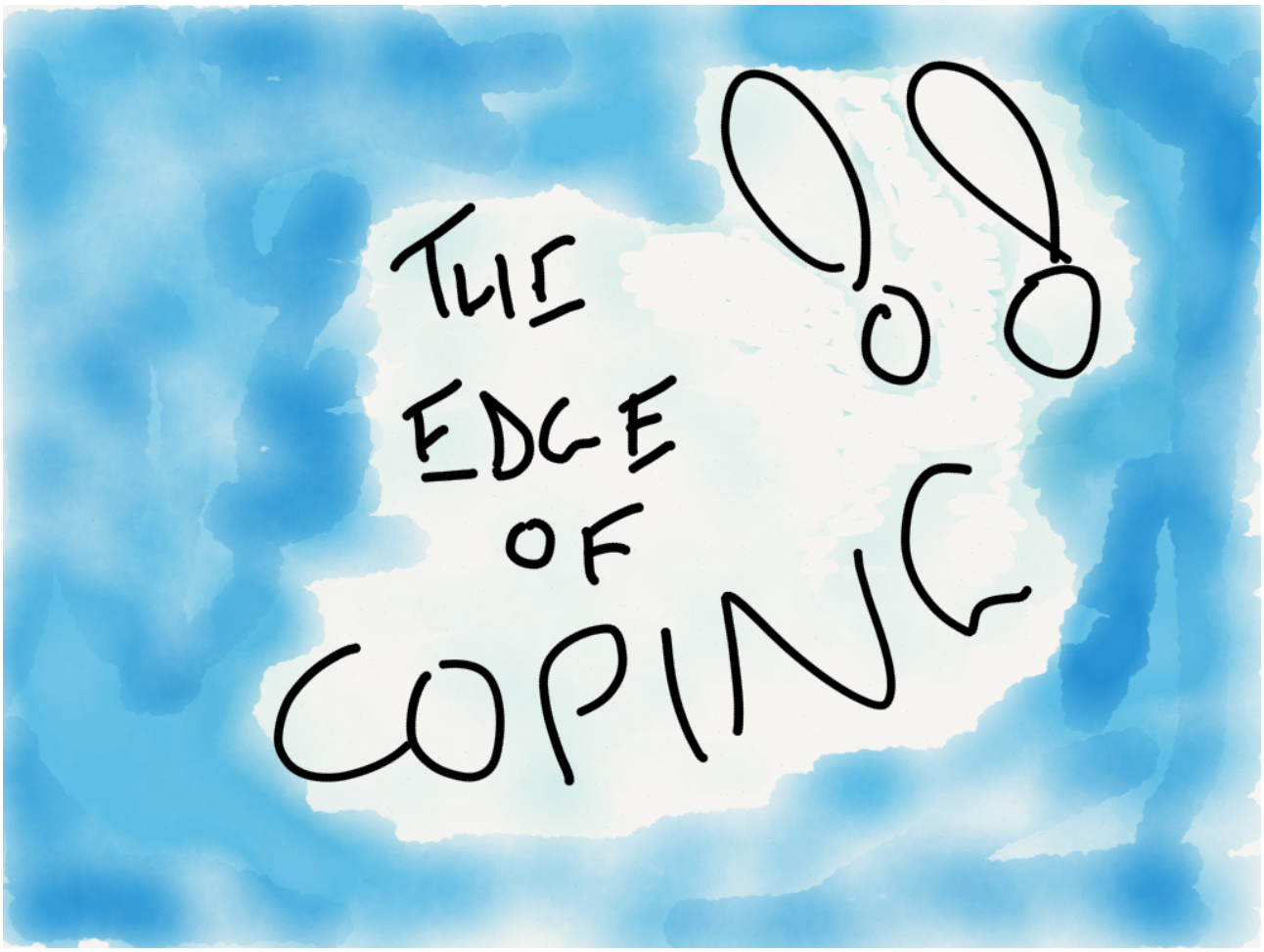
The Edge of Coping

ANMF Fatigue Conference 2015



By Pete Smith

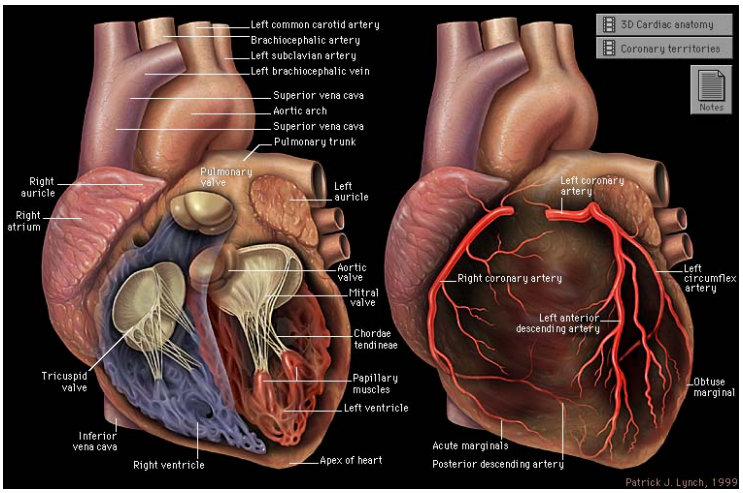
>
The heart is a hollow muscular organ.
It contracts and relaxes in a rhythmic, strategic fashion
to pump blood around the body.

It works through a system of nerves and muscle fibres
and valves and inflow and outflow tracts,
all of which **work together**
to deliver a **unique**, effective and **efficient** workload
which has the **capacity** both to increase and decrease
depending on the **demands** required of it,
the metrics of which get relayed to it
by a series of predominantly negative feedback loops.

As the heart is put under workload stress, two things become apparent.

First, it becomes increasingly important
to ensure that the heart muscle
has sufficient **oxygenation** and **blood flow** of its own
to ensure its **safe** hyper-dynamic functioning.

Second, the heart's muscular wall stretches
to accommodate the newly increased requirements.
>
Starlings Law describes the performance of the heart
in relation to this increased capacitance.



As the heart wall is stretched,
there comes a point **beyond which**
the heart muscle loses its ability to pump effectively,
and cardiac output **starts to fall**.

The heart is **beyond** its ability to cope
with the **workload** demanded of it,
and it starts to fail.

These are the range of possible solutions to this problem:

1: Do nothing.

2: On recognising a struggling heart,
give medications which make the heart beat harder and faster.

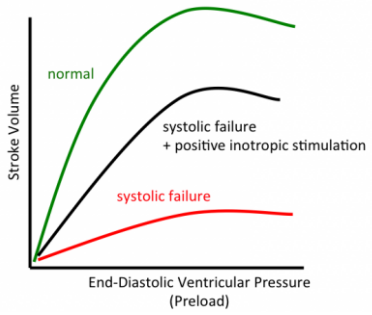
3: Take measures to **protect** the heart
and **offload** the pressures imposed on it,
making the heart beat **better**
and with less **effort**

whilst at the same time undertaking measures
to correct the underlying problem.

Doing nothing is an ostrich.

Beating it with medication is flogging a dead horse,
and could easily be reframed as 'Stalin's Law'.

The third is 'Starling's Law',
accepting the **limits** of systems sustainability,
and **respecting** the confines of those limits.



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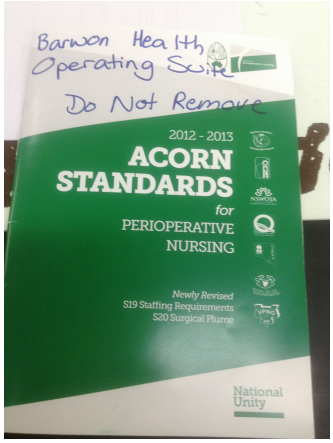
In 2013, I was involved in creating,
for the Australian College of Operating Room Nurses,
a guideline for the management of fatigue.

It was a landmark step for the College,
because for the first time,
they recognised the negative consequences of fatigue
on clinicians **<u>and</u>** on patient outcomes,
and were prepared to take steps to address the problem.

Whilst participating in this process, it became obvious to me
that the biggest obstacle
to implementing fatigue mitigation processes
was not one of **evidence**,
because the evidence has been around
for more than twenty years.

...Long enough to see wide-sweeping changes
in a number of other major industries.

The biggest obstacle, I saw, was a problem of mind set,



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Mindset problems are difficult to see from within,
until they are pointed out to us.

The first mindset problem is that our **social contract** is stacked against us:

That is:
that as a **clinical nurse**,
you will **do anything** asked of you
in the interests of **meeting others needs**.

Don't blame yourself for that skewed perspective.

Game Theory Mathematics and the 'Mathematics of Burnout'
explains that people who are meaningfully invested in their work
are statistically **unlikely** to say no
to any request asked of them,
if the answer of '**no**' means
that a third, **often unknown,** party is likely to suffer.

>

Secondly, we have to realise that, as a cohort,
we **really don't** get time to 'think'.

To be fair, **not** even **non-frantic** people
take the time,... and effort,... to think,

To quote a Greek philosopher, Diogenes:

"People give money to beggars who are **lame** and **blind**,
because they can always imagine a time
when they themselves
may lose an **eye** or a **leg**.

But they never give money to a philosopher,
because they can never imagine a time
when they may be required to think."

>
For one hundred years,
we have laboured under the workplace performance mantra
of time and motion.

For nurses it means:
>
If there's still time, for God's Sakes, do something!

It is a workplace methodology which feels right.

It gets things done with a **minimum** of cognitive input
and a **maximum** of delegation.

No one stops to **wonder** if the person being delegated to **is busy**.

It is assumed by proxy
that they **still** have room in their **diary**
to do '**more**' than the '**more**'
the **delegator** doesn't have time to do
and so delegates.

So time and motion as a methodology feels good,
is simple, reassuring,, authoritative...
and ... wrong.

It is wrong not because it is **wholly** wrong,
but because,
as proof of the **dual processing** theory of the mind,
we stopped **thinking** too soon.

It leaves out the most **essential** component of human performance:

Humanity.

Or to be more specific, **psychomotor performance**.
>
So here is the NEW and IMPROVED time and motion diagram, 'a la Pierre'.

Time:

Just like so much else, time is a resource.

There is only so much of it.

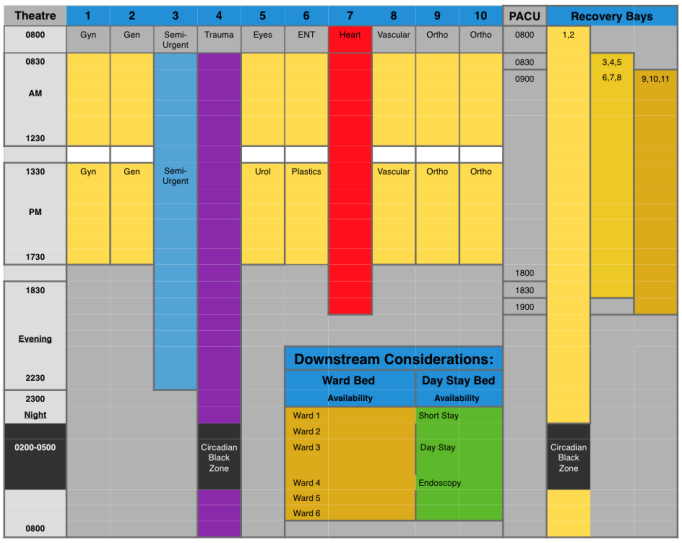
Time for us is a factor in considering the usage limits of:
>
Infrastructure;

Equipment;

and Human..... Capital.

There is only so much of everything to go around,
and only so much time to use each in,
each of which takes... time.

Therefore, the summative time,
whether you use these things in series or in parallel,
has an upper, concrete, mathematical limit.



We are used to seeing time as flexible,
and we make it appear flexible by compressing it
and creating a so-called time pressure.
>
Though we know that pressure,
real and perceived,
past a certain point,
degrades performance and decision making.

>

In terms of human capital, time seems compressible because

you can make people work harder and faster.

You can add in layers of extra tasks,
otherwise known as work intensification,

or you can impinge on non-productive time,
AKA tea breaks, lunch breaks and finishing times.

.....and it always seems to fit.

For each little bit you add in, you can always use the same rationalisation....

"But it only takes a second!"

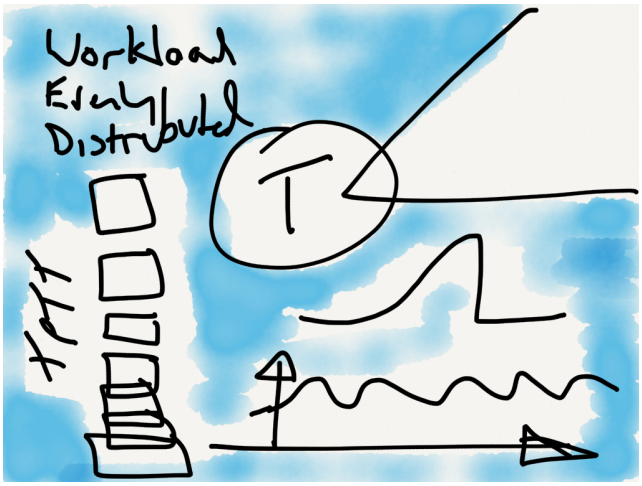
Pete's Rule of Workload:

The simplest way to determine if Work
exceeds the current capacity of the resource to deal with it
is if you got **your breaks**, and if you got **home** on time.

So in terms of human capital,

time is, in fact, concrete.

We just make it '**seem**' elastic
by disrespecting the boundaries of our most **valuable** resources,
our infrastructure, our equipment... and most of all, **our people**.



Time factors of workload can further be divided
into **workload distribution** and **work intensity**.

Workload distribution
is the distribution of work over the course of your shift.

Work intensity occurs
when workload distribution is skewed in time.

So you get busier and busier as your day progresses
and your task load piles up.

The problem is that we as nurses haven't had a way to **visualise** this problem.

Until now.

The Tectonic Plate Tetris Theory of Workload came about on a day just like many other days.

We were being smashed with **monotonous** regularity,
And some **quite nasty** conflict was resulting because of it
and so I took it upon myself to try to work out why.

I mean, I know it's not hard to figure out **why**,
but what I wanted to know was: **why why**?

What lessons were we **repeatedly ignoring**
in perpetuating an unsafe work environment?

>

I used a journey mapping app to record each task sequence
I performed over the course of the day.

What I found astonished even me:

86 task sequences, some simple, many complex,
amid the unstructured, confused and convoluted evolution
of a standard run of the mill
Weekend emergency and semi-urgent operating list day.

6.5 minutes per task sequence.
Crazy.
Late lunch, ...and...
Only time for a wee break and a glass of water in the afternoon.
Stupid.
Fortunately, I have a colostomy, so I didn't have to worry about doing a shit!

14 errors in care.
Fortunately, none were potentially fatal.

To be kind. It was an early shift after a late shift,
so I had worked 19 hours in 28, all on 5 hours sleep.

What I realised in recording my day
was that I could render my task sequences
into discrete blocks of activity.

Each took a fairly predictable amount of time,
and each was sequenced one after another.

>

And I realised that as the day progressed,
all the blocks started smashing together:
Like tectonic plates.

In amongst my observations was the revelation that,
being discrete blocks,
I could see where the leverage points existed
to offset the cascade
By using more effective resourcing
and decision making algorithms;

and also where it was possible to provide a safety net
of rest and restoration, should appropriate systems allow,

Which would allow me to refresh and recharge my energy levels
before the **inevitable** fatigue
led **irrevocably** to the **inevitability** of errors.

>

I ran this past my friend and colleague, John Gibbs,
and he thought it looked like Tetris.
But I've walked the Himalayas, and I've seen what pressure can do,
So We agreed to call it
the Tectonic Plate Tetris Theory of Workload.

You can see what I mean.

First go the micro-tasks.
Then go your rest breaks.

Then goes **safety** as formalised policies and procedures
are made in-actionable, become eroded
and **succumb** to production pressure.

Time is fixed.
It is not elastic, even if we make it seem so.

>

Motion:

Motion is how we **do** what we do.

If you want a definition of a 'Rut', it is this:

"Always doing what we do because that's the way we've always done it."

It's not that the work isn't doable.
Its that it is not doable **from within** our current systems of work.

As work exceeds the availability of time to do it,
the system descends into unsustainability
and chaos.

And in the presence of chaos,
it takes so much more energy
to focus on your own little part in the whole cyclone.

>
As workload descends into chaos,
Cynefin offers some useful observations:

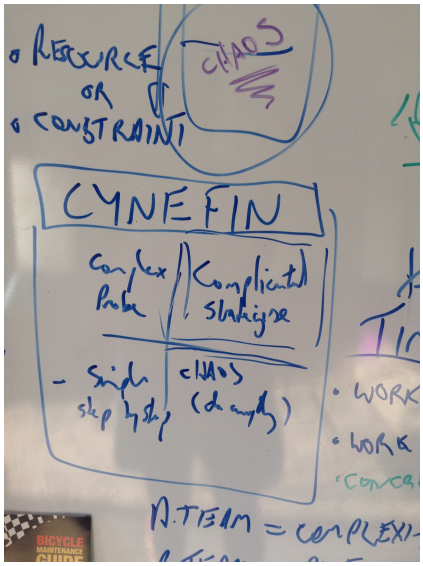
When things are **simple**, you engage, step by step.

When things get **complicated**, you probe,
developing a hierarchy of prioritised actions,
and you set about **achieving** your **goals**.

When things become **complex**, you strategise by contingency.
Your Plan B becomes your Plan A, and you **develop a new Plan B**.
You prioritise the things you **must** do,
and **let go of** the things that would simply be '**good** to do'.

When things descend into **chaos**, you **<u>do</u>** '**anything**'.
And believe me. You **will**.

Cynefin is **not** a strategy.
It is a **workload-specific cautionary tale**.



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If you want to look at motion as an entity, here are some components:

There's **Human Factor Ergonomics:**

the positioning of everything,
and the **twists** and **turns** and **strains** and **traffic movements**
and **load distributions** you have to go through
to accomplish your tasks.

Ease is good.

Then there are **Systems processes**, both **real** and imagined.

Systems of work is the **REAL**. It is how you **do** them.

'**Imagined'** is how they a **<u>written</u>** in the procedure manual.

B**uilt** into this is **complexity:**

policies upon policies and tasks upon tasks
which, **when put together**, overload you
beyond your **ability** to **comply** effectively with them,
given the time you have to do them in.

Maybe it is now **time** to **incorporate** into nurse **patient** ratios
.....the concept of work / **futility** ratios!

How much of your day is spent
in clearing obstacles from your care plan,
like getting orders written, chasing results
and waiting for someone else to do something
so that you can do your thing?

The current nurse-futility ratio is somewhere between 30% - 50%

>

So Instead of platitudes that fly in the face of human nature
and become your new prison
because they are repeated and reinforced
and grow to form beliefs,

how about we accept the reality of our limitations,
and expect ourselves to be **no more than** human?

>

:Motion is all about flow.

It is about sequencing work.
And developing systems which aid flow,

implementing **pre-formed** layers of contingencies which,
when enacted, resource or constrain the chaos;

Which allow the system to '**learn**' and adapt

since **subtle** and **nuanced** variability
creates a **vibrant** complexity
which soon runs away on you
if you don't **watch out for it**.

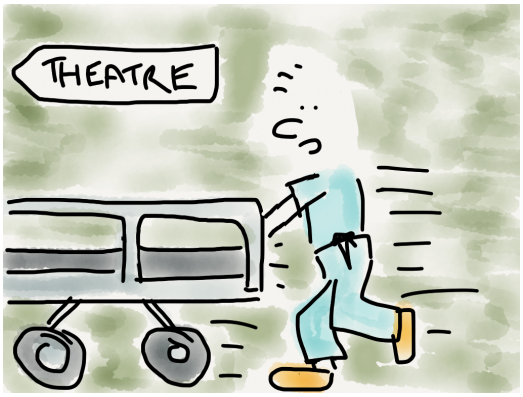
Integrating time and motion means that you can only do so much,
and expect to do it well and sustainably.

We can do more, but the risk is enormous
and the possible consequences unconscionable.

>So if you want a system to work hard,
and it seems we can't help ourselves

but **demand** it of health care,

optimising the way
we **think** about and **construct** process
becomes critical.



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High performance team methodologies set about
optimising the system.

We consider motion to be fixed, immutable.

But it is the one thing in **this whole equation** that is **flexible**.

It is the **one thing** that can **<u>change</u>**
to bring the fatigue picture
back into high performance, high reliability
safety and quality alignment.

>

Performance:

Humans do nursing.

That is why we look at human performance.

If we were robots, we would be looking at mechanical stress points.

>

Psychomotor Performance is:

Cognitive Performance
Rest
Nutrition and fluid maintenance
Well constructed planning and contingency management
Alertness
Cognitive load
Distraction
Checklists and memory aids
Building strong neural pathways
Unburdening

Endurance Performance.
Rest
Nutrition and fluid maintenance
Well constructed workflows
Alertness
Muscle load
Proprioception
Mechanical aids
Building Muscle memory
Unburdening

We know a lot about these.

We know **when** and **how** the brain functions best
(when it is rested and fed and not overloaded).

We know when and how the body functions best
(when it is rested and fed and not overloaded)

Then add to this emotion:
We know when, and how emotions function best
(when we have time for defusing, processing and disentangling)

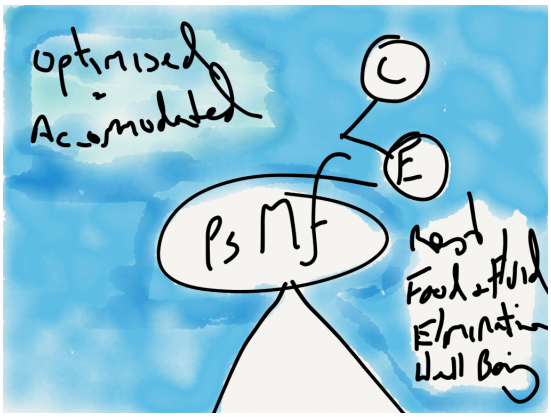
We just **refuse to apply** that knowledge to ourselves.

And we consider **psychomotor performance** parameters to be **flexible**,
whereas,
in order to be high performance,
boundaries appear which are **concrete and definitive**.

Beyond these limits, performance is degraded.

Therefore, **the only thing that is <u>flexible</u>** in performance
is the **<u>level</u>** of performance you can deliver
given the constraints you suffer in real time.

High performance or low performance.
It becomes a choice.



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Why should we worry about this?

In 1992, **preventable deaths**, from **medical errors**, in Australia alone, were calculated at 14,000.

If you believe the Institute of Medicine's '**To Err is Human**' Report, **50%** of these could be said to be directly attributable to fatigue.

This is the **biggest untreated epidemic** in healthcare today.

To put it on a scale:

The number of people diagnosed with bowel cancer in Australia is 14,000 per year.

The cost of treating Bowel Cancer in 2011 was $1 billion dollars. **Happily resulting** in a five year survival rate of 66%

The five year **survival rate** for death through **preventable** medical error?

Zero.

>

So, putting it all together around Starlings Law, this is what we get.

The more you push a system **beyond** the point of **sustainability**,
the more likely it is to fall over.

The heart is subject to not only **time** and **motion** factors,
but **performance** pressures as well.

And most critical to sustained performance
is coronary artery blood flow,
or how the heart nourishes and restores itself.

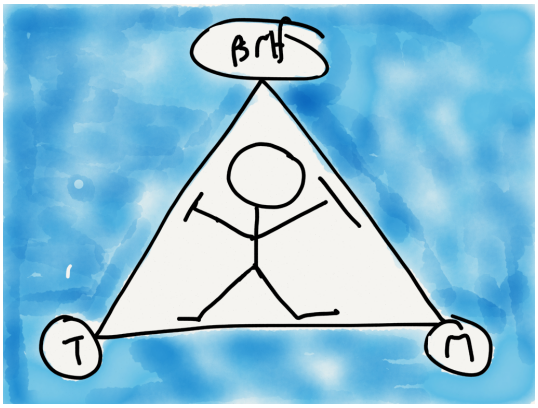
If it is **true** for the heart,

>

then it is **true** for yourself as well,
as a dynamic person
within a dynamic system
within a dynamic organisation.

The system should be **robust** enough
to allow you to drop an **average** person into it,
and have them perform well.

Currently, we stick **imperfect** people in an **imperfect** system.
And expect them to be **perfect**.



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If we link the three elements together,
we get the edges of workload performance,
Outside which systems failure occurs.

If we link **<u>time</u>** and **<u>motion</u>**, we get the **Edge of Sustainability**.

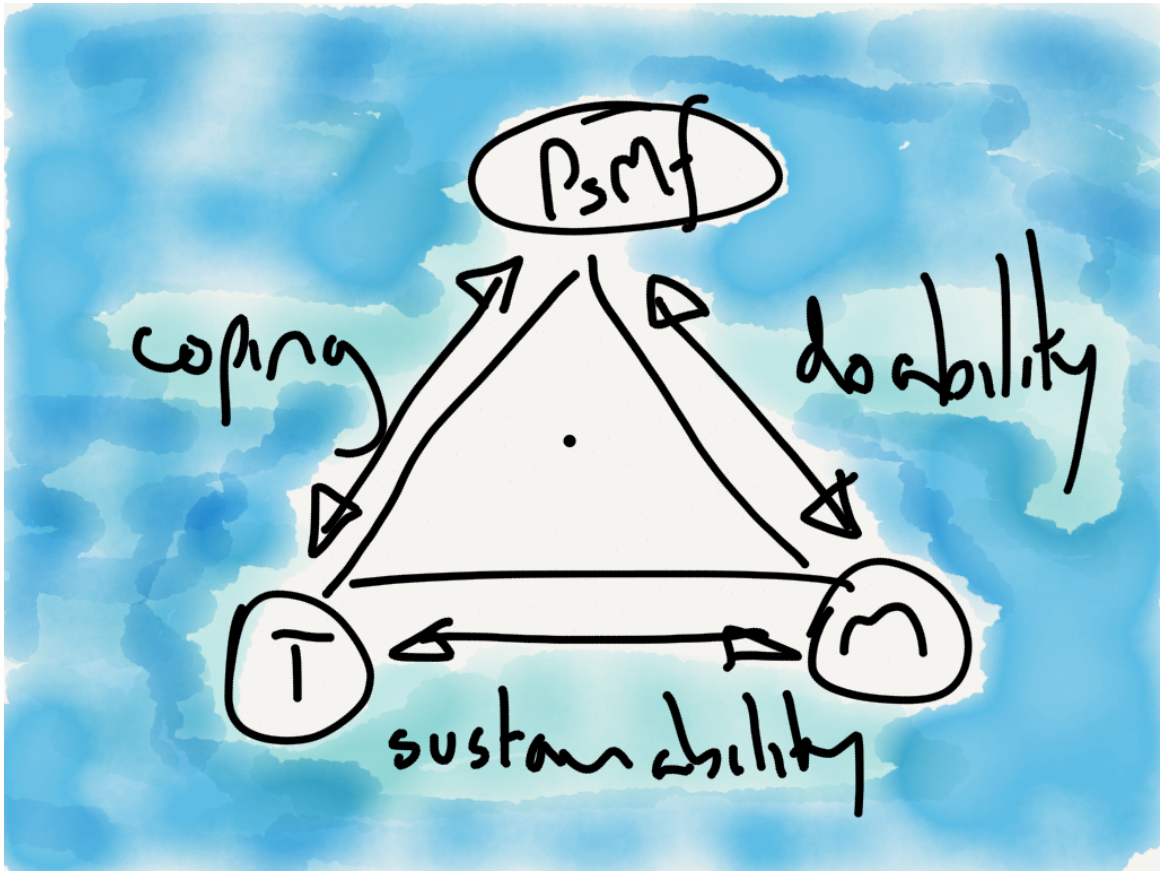
If we link **<u>motion</u>** and **<u>performance</u>**, we get the **Edge of Do-ability.**

If we link **<u>performance</u>** and **<u>time</u>**, we get the **Edge of Coping**.

Outside these we get **fatigue**, **<u>musculoskeletal injury</u>** and **stress**

Inside, we get

optimised sustainability,
optimised outcome and
optimised engagement.



So if this is you:
if this is the **dot point singularity** of you
existing with this workload construct,
this pyramid of human work performance,
what are your **rights**, your **responsibilities**
and your **duties of care**?

>

Your Rights:

Your **enterprise agreement**;

And the **WHS Legislation** which gives you the right to a safe workplace
in terms of both physical and psychological health

And, although few people invoke it, the Human Rights and Equal Opportunity
Legislation.

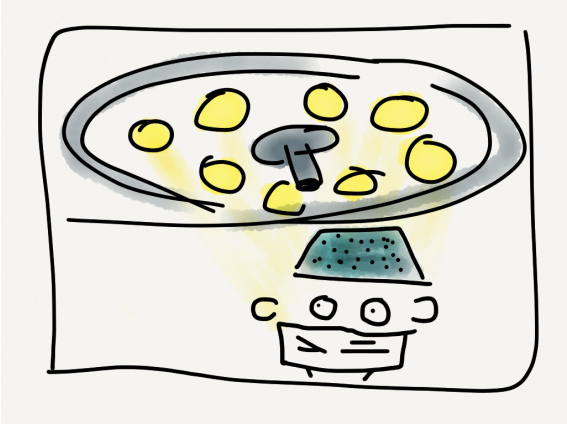
Your Responsibilities:

Refer specifically to...
The Accreditation Standards:
and in particular, the Governance of Safety

As well as the...
Patient's right to receive safe care.

Your Duties of care:

Self
Family
Patients



>
Now I wonder:

What is your agreed social contract?

And who agreed to what?

Did your employer representatives, and lets be clear:

an **employer** (eg, Straw Hat Hospital), is an abstract entity,
and you have no power against an abstraction:

An employer representative is a person, (eg Lüffy)
with authority and presumably accountability,
and you have power against a person;

Did your employer **representatives**,

upon you signing your employment contract,
in the back of their minds, think:
>
"**This person, agrees** to work
beyond the edge of sustainability,
beyond the edge of do-ability,
beyond the edge of coping?"

And did you,
>
upon signing **your employment contract**,
in the back of you mind, think:

"I agree to work
at the level of optimised **sustainability**,
optimised **outcomes**,
and optimised **engagement**...

...because that is where I REALLY would like to be?"

Did you, in other words,
agree, or not agree,
to work **ad infinitum** within a **SICK SYSTEM of WORK**,
where it can be the toss of a coin
between being a **competent survivor**,
a **burnt-out victim**,
or, over time, possibly both,

all because a passive person,
rather than **advocating** on your behalf,
Somewhere, somehow,
offloads an **unsustainable workload** onto you
and **offloads the blame** onto an abstract entity?

Of course, **Sometimes...**

you **will** be asked, to dig **VERY** deep, into your reserves,
In order to get the job done,

but that should be the **exception**.
Not the **rule**.

And the **risk-benefit ratio** with **respect to the outcome should be worth it**.

Legendary actions should **remain** legendary
because of their uncommonality.

How we **think** about fatigue
can be demonstrated using the dual processing theory of the brain.

Let me show you.

>

I'm in **Lorne** for the day with the family, and because we like beach cricket,

I go to buy a beach cricket ball because, **silly me**,
I only remembered the bat.

I go into the shop, **and there it is**, a bat and ball set..... for $1:10

I go up to the shopkeeper and I say:" I really only want the ball".

He says, **well**, I suppose I **could,** sell you the ball...
But, together, the bat and ball cost **$1.10**
If I sell them separately,
the bat **costs a dollar more** than the ball.
So how much is the ball?

So you see, **that** is the way we think about fatigue.
Our brains trick us into deciding on **one easy answer**,
and that answer,
although it is often wrong, **is very hard**
To get out of our heads.

Our brains say: "I survived. I coped. Just.
I don't have the energy to worry about it **now**.
So I'll worry about it NEXT time."

But when it comes to next time
Our brains say the same thing.

5 cents.

So how can we change that?

We need to give you a new frame of reference.

>

How many of you know how to **make** a fly?

This is the **instruction manual** on how a fly is made.

See how much detail there is.

How many of you know how to **KILL** a fly?

This is the **instruction manual** on how to kill a fly.

See how thin it is.

THIS (Policy Manual) is a manual on how to **create** fatigue.

This (Two pages) is the **instructions** on how to **kill** fatigue.

See how thin it is.

You **don't have to know** everything about everything to solve the problem.

You only have to know **what <u>YOU</u> can do**.

>

Start in ever increasing concentric circles **centred**... **about** ... **yourself**.

Know your own limits:

17 hours of wakefulness
equates to a performance equivalent of a blood alcohol reading of 0.05

12.5 hours of work increases the rate of error by 200-300%

Know the **IM SAFE** acronym,

and know how to calculate your **sleep debt**.

Use **FAWPI** to identify how your fatigue is affecting you,
and use it to communicate that
to those who can't possibly understand.

And **advocate** to everyone around you,
peers, managers, family,

what you know about the **risks**,
personal and professional,
of fatigue in nursing.

>

So in conclusion, because we are out of time.....:

There is not enough **time**.

And **because** there is not enough time,

We don't give ourselves the chance to **think**
about **time** or **motion** or **human performance**.

Somehow, we need a circuit breaker which allows us to disentangle,

To step back,

Clear the **muddy pools** of the mind,

And allow **clarity** to give us the embarrassingly **simple** answers
to the problem we have **overburdened ourselves with** for so long:

In a **humanistic** profession

We are only human

And being human, we should construct our **work**...

... **to fit us** and **our needs**

Rather than **contort ourselves** to fit the work
...so often
.... so heavily
..... layered upon us.

We want to obey **Starlings** law.

Not Stalin's law.

Thank you.

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