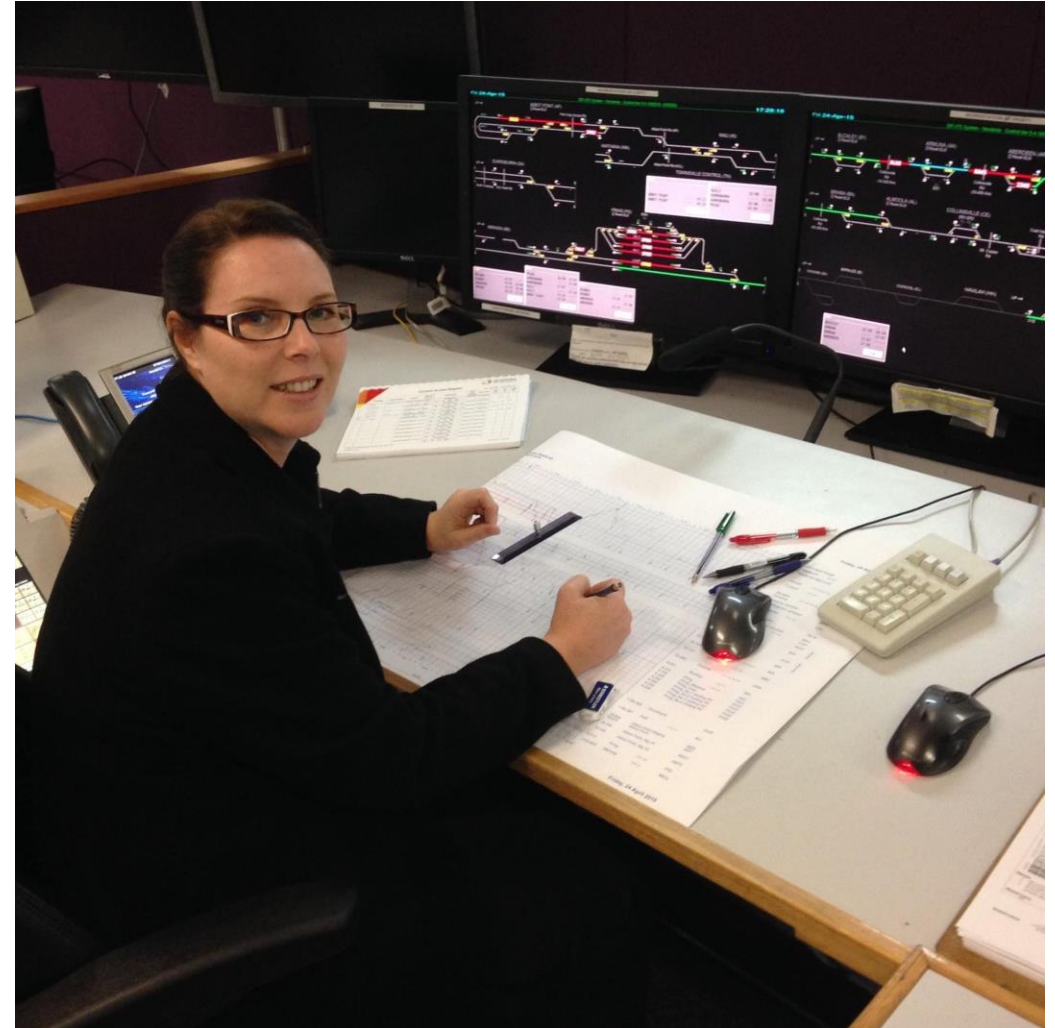
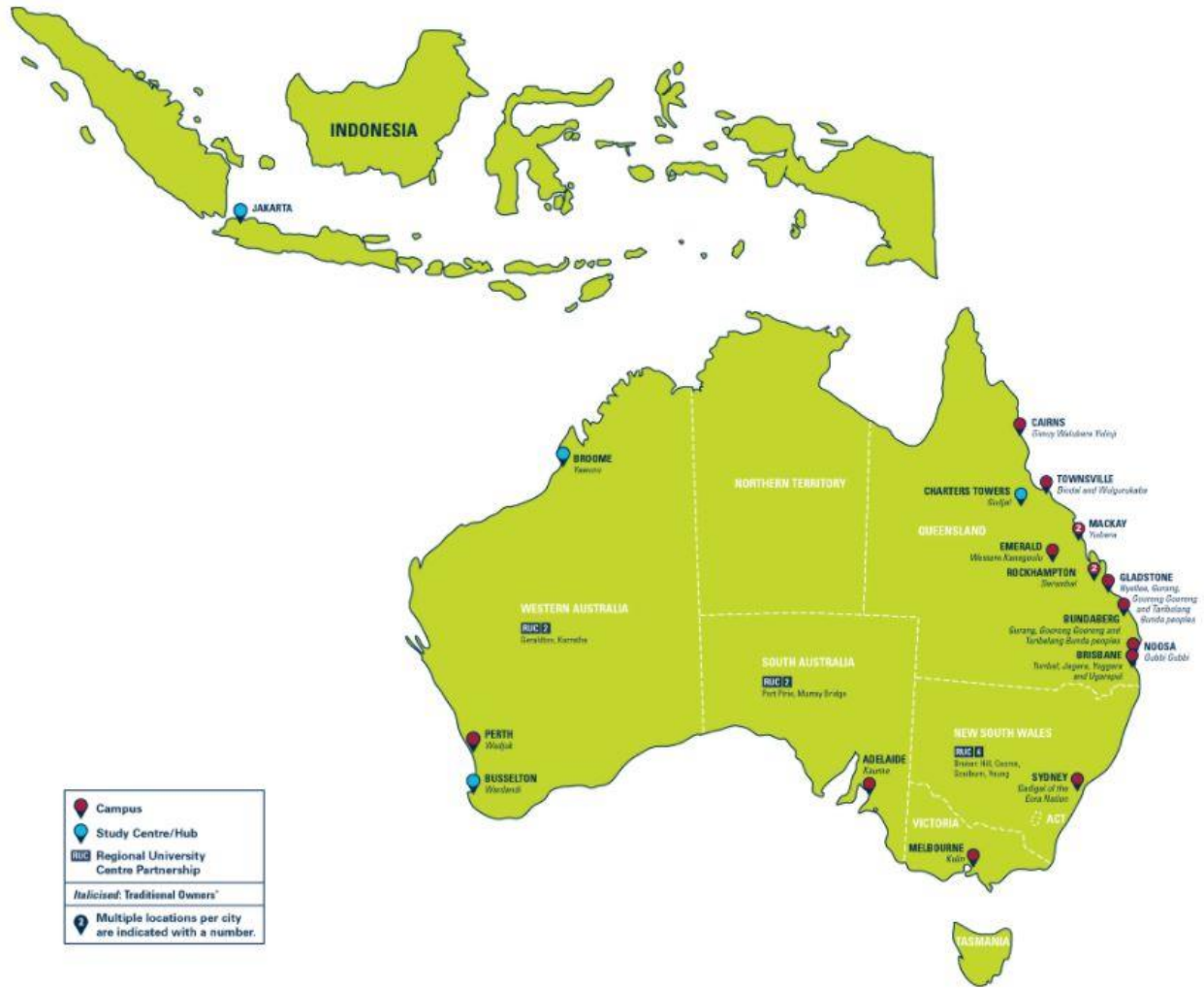


# AUTHORITY GRADIENTS BETWEEN FRONTLINE WORKERS: MOTIVATIONS AND BEHAVIOURS

Bridie Luva and Anjum Naweed



# RESEARCH TEAM



# WHAT IS AN AUTHORITY GRADIENT?

Unequal distributions in power that inhibit communication.



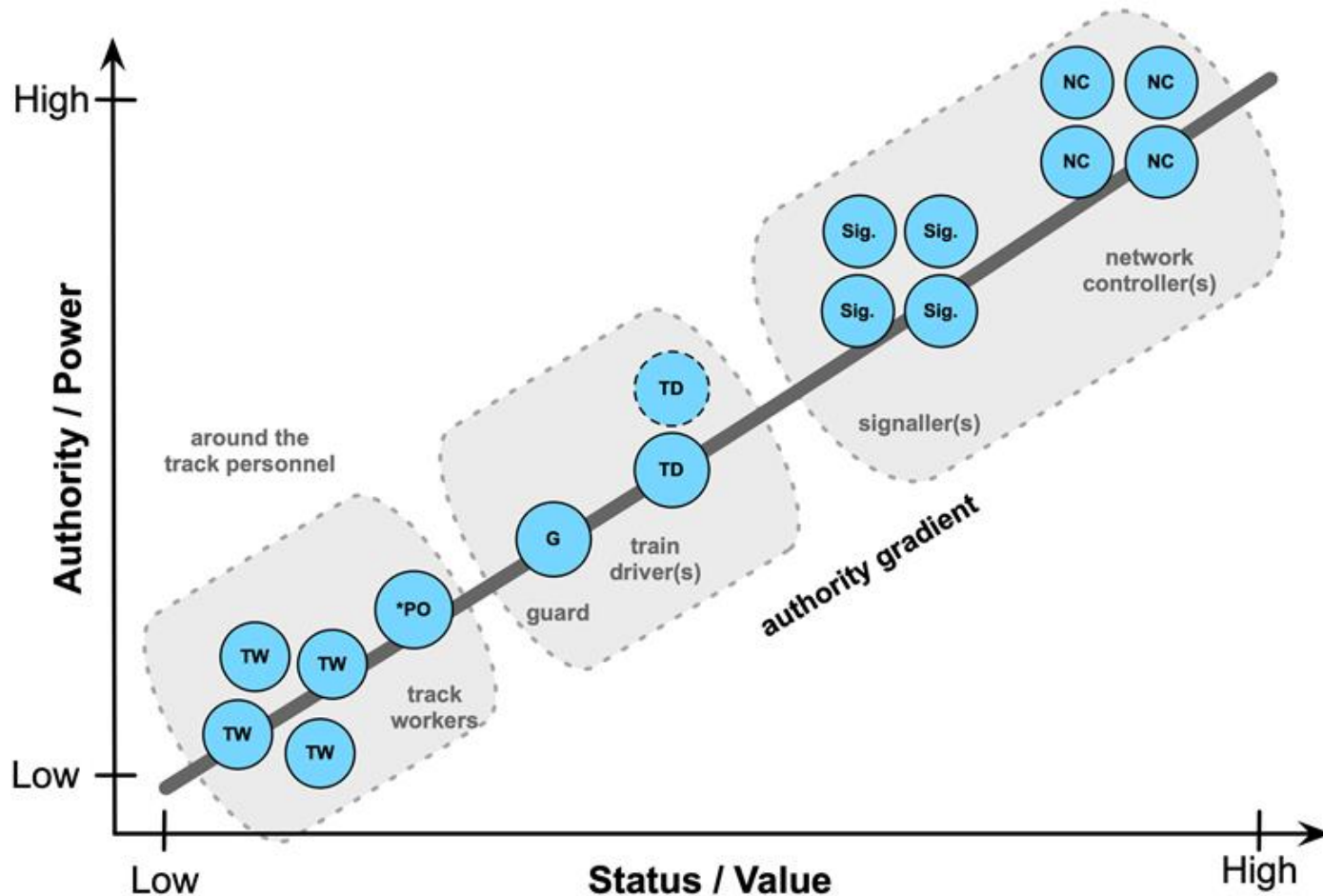
(Illawarra Mercury - The scene of the 2003 Waterfall train crash)

“One of the matters weighing against a good safety culture is the authority gradients that operate within the rail industry...”

(The Honourable Peter Aloysius McInerney QC, Special Commission of Inquiry into the Waterfall Rail Accident.)

# THE AUTHORITY GRADIENT IN RAIL

Authority gradients are 'steep' or 'shallow'.



- Network controllers [also called signallers, area controllers, train controllers, chief dispatcher].
- Train crew incorporating drivers [also called locomotive engineer, railroad engineer, train operator, engine driver, loco pilot] and guards [also called conductor].
- Around the Track Personnel incorporating a range of track maintenance workers

# METHOD

## Thematic analysis

Understanding the data



Devise initial codes



Identify themes



Review of coding



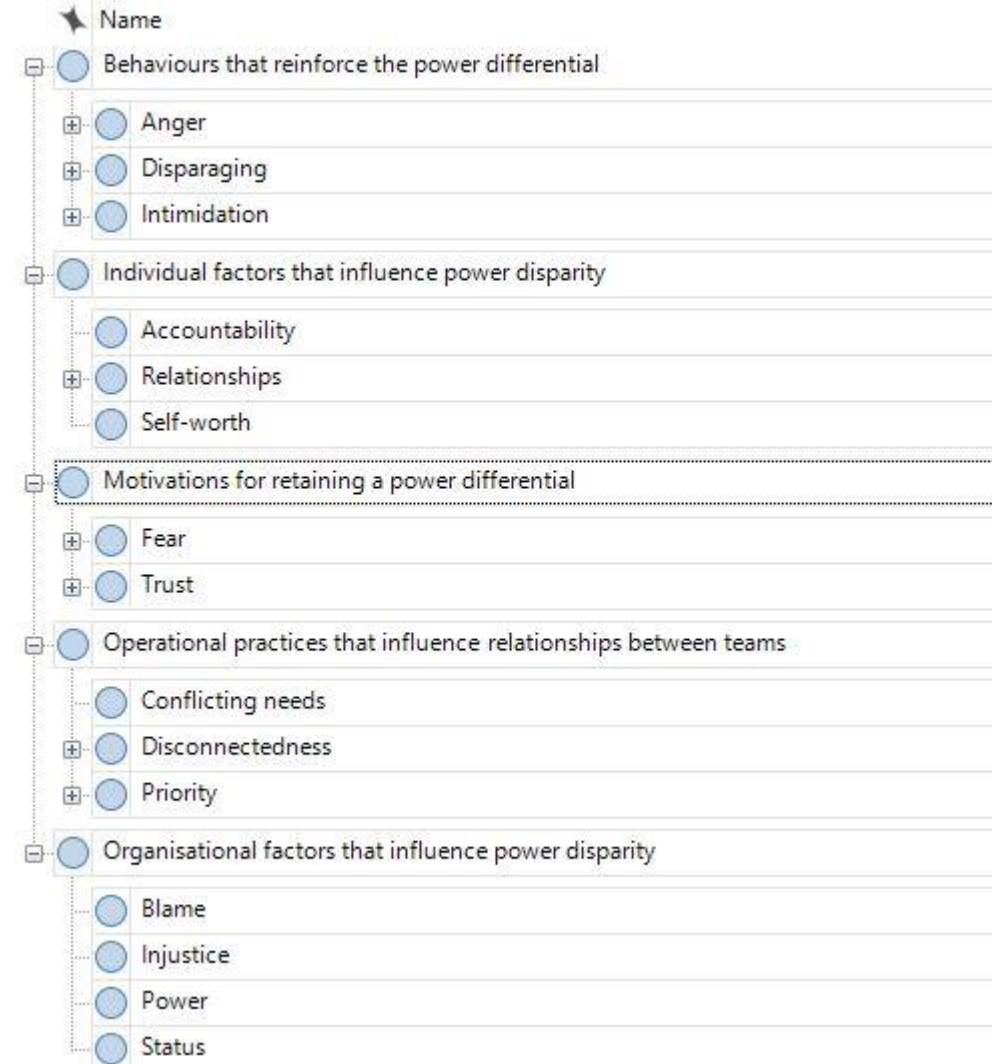
Refine themes



Write-up

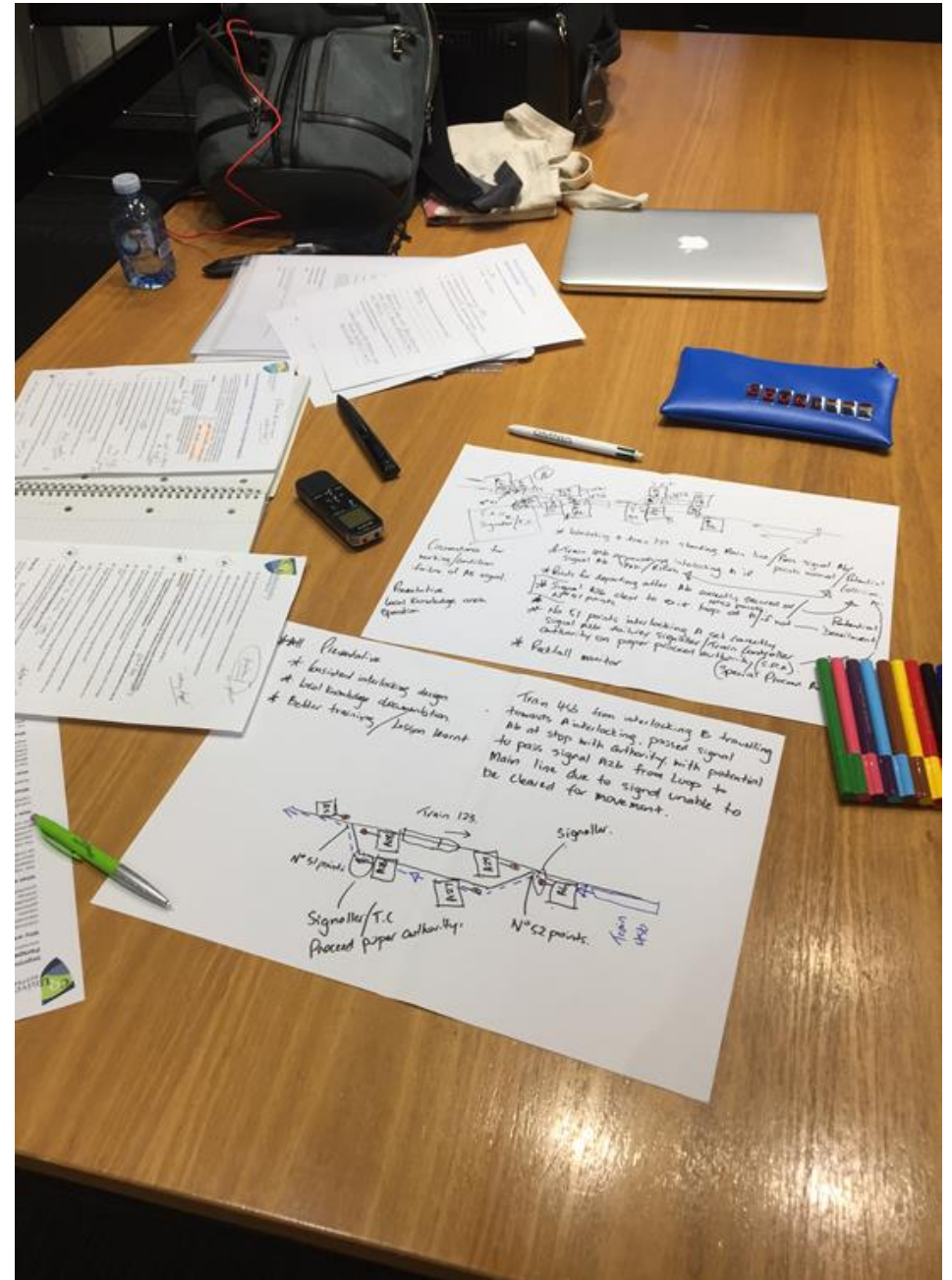
## Constructivist grounded theory

### Nodes



# SAMPLE

- 55 network controllers
- 8 Rail organizations from Australia and New Zealand
- M age = 45.5, SD = 11.1
- M experience = 15.83, SD = 12.18



# FINDINGS

## INFLUENCES ON THE POWER DIFFERENTIAL

### FEAR

Consequence

Risk to Self

Risk to Others

Probability

### TRUST

Competence

Cutting Corners

Dishonesty

## BEHAVIOURS THAT REINFORCE THE POWER DIFFERENTIAL

### INTIMIDATION

Punitive Action

Compliance Under Pressure

### DISPARAGING LANGUAGE

ANGER

# SUBTHEME 1: TRUST

- Competence of other workers

“I’m going to ask you 27 more questions because you’ve set a standard in the back of my mind of not being (I don’t want to say unreliable) but not quite accurate all the time exactly your understanding of what you’re doing.”

- Cutting corners

“I’ve had where people will try and book on before they’re actually at the location. One, where they just simply don’t have any idea where they are and also, because they can’t be bothered to go and check the signal numbers.”

- Culture of dishonesty

“I’ll ask where they are, if they’ve gone past the signal, I’ll ask them what colour it was. I’ve had all sorts of answers. Most will say, red. Some will swear that it was green, even though it wasn’t. Yeah, and some just won’t tell you.”

# SUBTHEME 2: FEAR

- Risk to Self

“During the middle of the peak a ganger might decide to put a speed restriction on a certain area so you’re having to tell the trains of that restriction and if we miss a train then we get stood down and drug tested if the train doesn’t get the restriction.”

“[Special Proceed Authority] is the most likely thing to get a train controller in trouble and have got some very technical and obscure rules based around them.”

- Risk to Others

“See, unfortunately, we had an incident there which really brought it in. You’ve got zzz, one’s WA27 and one’s got WO27. So, we had a guy there at zzz asking – WO27 mate, WO27 – yeah, WO27, yeah. So, he put is blocks on WO27, but he’s WA27 and we nearly ran him over with a coal train.”

“It’s their life on the line, do you know what I mean? It’s their life on the line and they come out and they’re quite blasé about it. Yeah, I just want this and... Mate? If you fuck it up, you’re dead, this train will run you over and I’ve got to live with this at train control knowing full well that you weren’t listening or whatever.”

# SUBTHEME 2: FEAR

## Probability

- “But if we’re going to make a serious error and I’m talking a safety error, it’s probably more so after the peak because what happens all the track workers come out.”
- “Track warrants have, over the years, been the one that’s caused the most error.”

*“In this scenario if the controller is busy with other tasks, i.e. track authorities there is potential for controller to forget/not know that points are interlocked. In order to prevent this scenario the controller should ensure they are not distracted when giving technicians authority to effect network, i.e. crank handle removal, standby start UPS....”*

# SUBTHEME 2: FEAR

## Consequence

- “The signaler stuffed up and a bloke was killed because of his actions.”
- “Okay, so your worksite’s here, we’ve confirmed that because we’ve had it in the past where I’ve put the limits here and his worksite’s out here! Next thing a train comes up and nearly runs him over, okay, bad, okay.”
- “The people on track, if they make a mistake – a poor guy lost his life in the last 2 or 3 months, struck by a train on a track, one of our track workers.”

- Ganger gives TC speed restriction due to track fault
  - TC draws on graph in pink
  - TC enters restriction into OMS
  - TC notifies platform to reprint speed
  - TC notifying trains about new restriction
    - pink “A” beside train line to show they have advised
  - TC is giving a track warrant to another train
    - dealing with a breakdown further up the line
    - loo break
    - distracted
- Oops, forgot to tell train! 😞 - s652
- Then - LE dobs in TC. Nem stands down TC
- Drug test
- Disciplinary meeting
- Risk Register”

# THEME 2: BEHAVIOURS THAT REINFORCE THE POWER DIFFERENTIAL

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DISPARAGING LANGUAGE

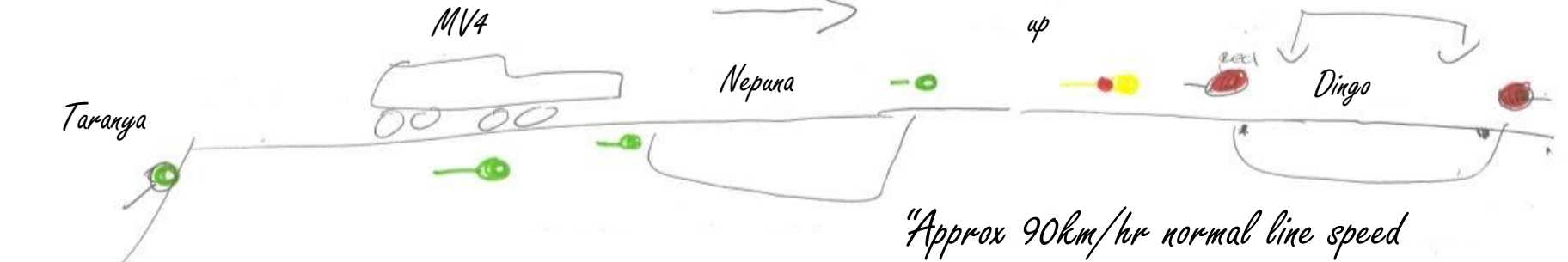
ANGER

# SUBTHEME 1: INTIMIDATION - TRACKWORKER

- Withholding access
- Delaying commencement/departure
- Reducing track time

“So, one TOA’s going on, I’m fine, 10.20, he’s good – unless he’s a real idiot and he rings me up at 10.23, it’s the only TOA going on and he rings me up at 10.23 and he delays the train by 3 minutes. Then straight away I’m saying – buh-boh, you’ve just blown your chance! This bloke, the first time he’s already buggered that up I’m straight away going to reduce his time slot.”

# SUBTHEME 1: INTIMIDATION - TRAINCREW



- Setting up failure
- Withholding information

1. Applied blocking for trackwork. Dingo station limits
2. MV4 Given signal @ 0900am. Ready to depart Taranya
3. @910 workers called off and clear. Blocking removed signal was not changed to a Proceed.
4. Signal was not changed due to emergency call coming through
5. MV4 continued and passed signal at danger while TC was attending emergency call.

## Contributing factors

1. Already annoyed not given a signal to depart due to track work between Taranya and Nepuna.
2. May have assumed TC was going to clear signal because he heard TC giving workers clearance."

# SUBTHEME 2: DISPARAGING LANGUAGE

- Belittling
- Condescending
- Lack of empathy

“These guys aren’t the sharpest tools, they’re nice fellows, but they’re not the sharpest, you know what I’m saying. They’re good for digging but you know, anyway.”

“Yeah, like they can physically drive the train but a monkey can do that.”



# DISCUSSION

- Attitude drives demeanor

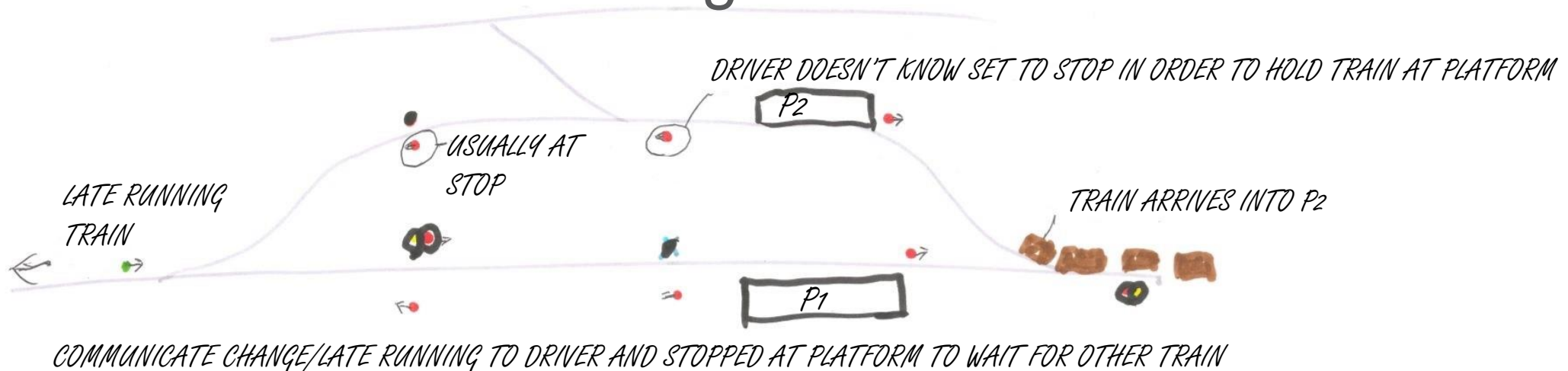
*“CAUSES of SPAD. – dynamics between controllers (internal divisions)”*

- Risk perceptions inform attitude

“If perception affects behaviour we may also be able to change people’s attitude and behaviour by influencing their perception of risk.”

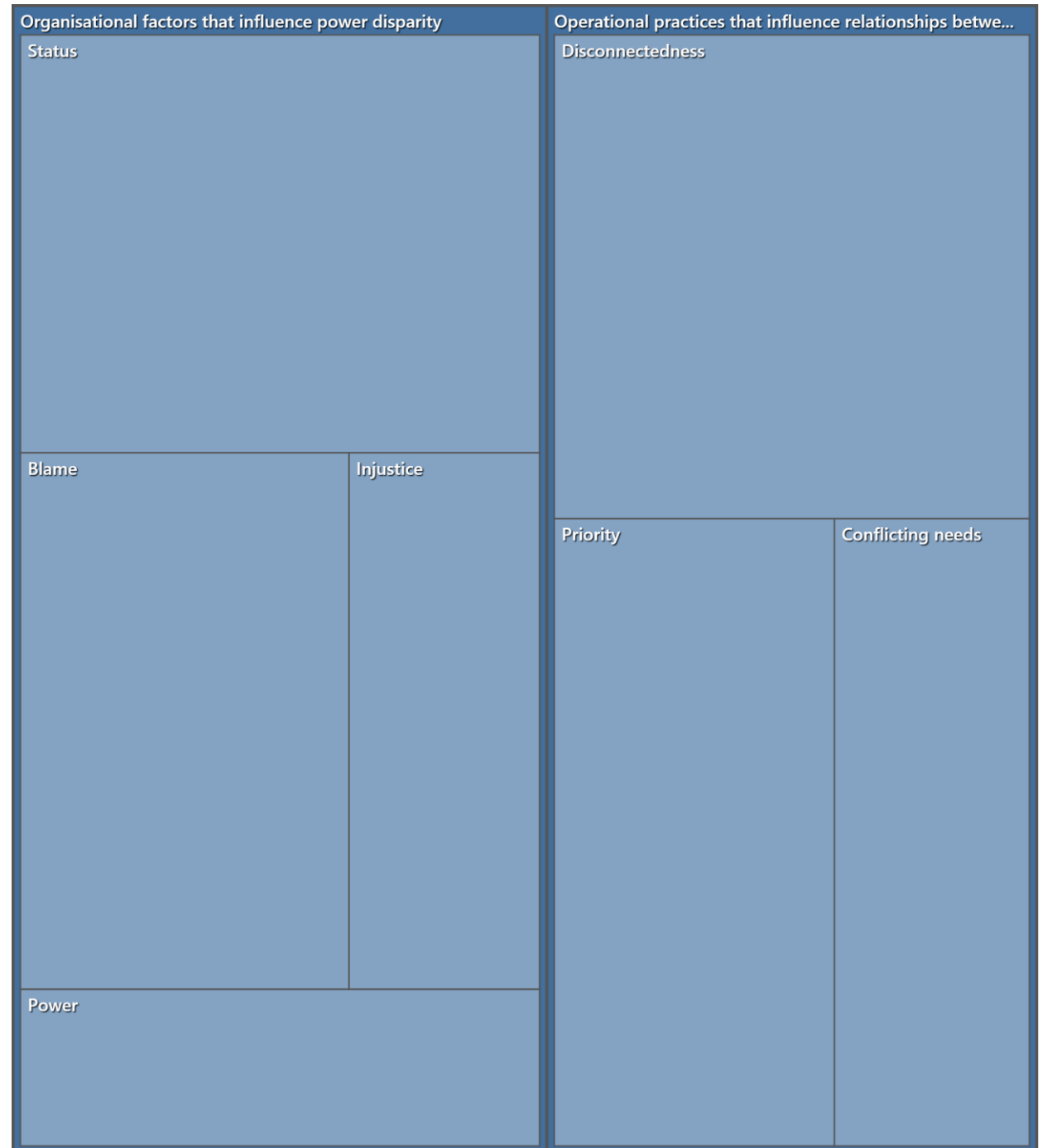
(Sjöberg, L., Moen, B. E., & Rundmo, T. 2004)

- Communication exchanges increase risk



# FUTURE RESEARCH

- **Organisational influences:** that is the cultural within an organisation
- **Operational practices:** the polices and procedures that compound unequal power distributions.



# Thank You

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