Stream: Cyber & Technological Capabilities

Upstream Operations: resilience to malign intent

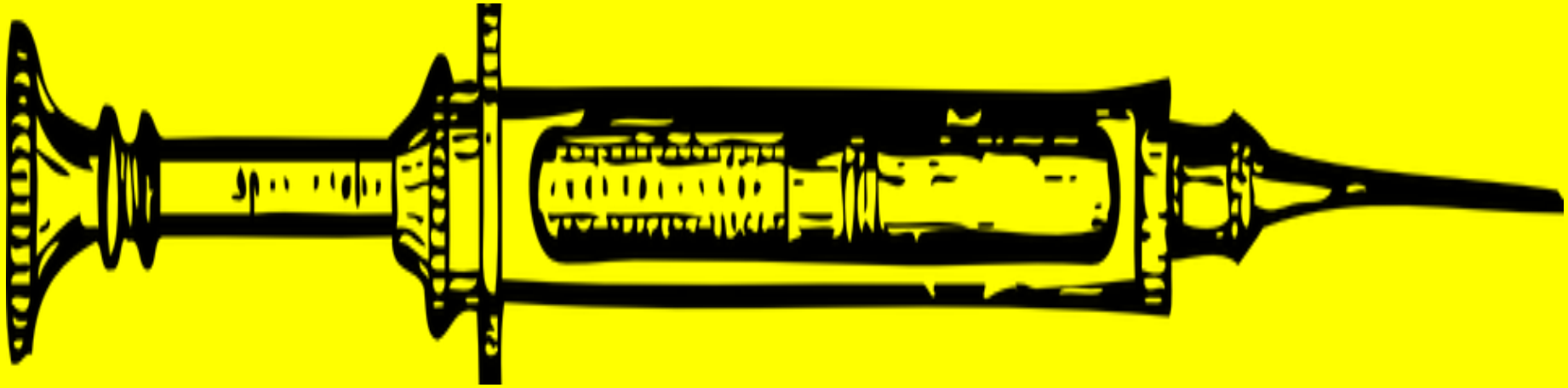
'Analogical Reasoning' for new options to detect & engage invasive pests

ARMY

THE UNIVERSITY OF NORTHAMPTON
Northampton Business School

Mils.hills@northampton.ac.uk
Associate Professor | SGMI-ISR


WHAT IS
the purpose of
the academic?



Adding Value through:

- Practical Creativity
- Disruptive Innovation

Analogies are a form of conceptual technology

A powerful way of inciting novel thinking by conversing across silos to achieve concrete outcomes

'What if' we thought of 'X' as being just like 'Y'?

Real World Application

- IT Sy & Org BCP: *develop immune system & vaccines*
- Lean, scenario-driven exercises for Resilience: *attenuated reality*
- Radicalisation & undesirable behaviours: *infection as though by parasites*
- Dreaming: (oh, that was real)


Insights to help anticipate & act
'upstream' as well as to develop
counter-measures to adversary actions

Era of "full-spectrum conflict" (Jonsson & Seeley 2015)

Learn from Invasive Biology

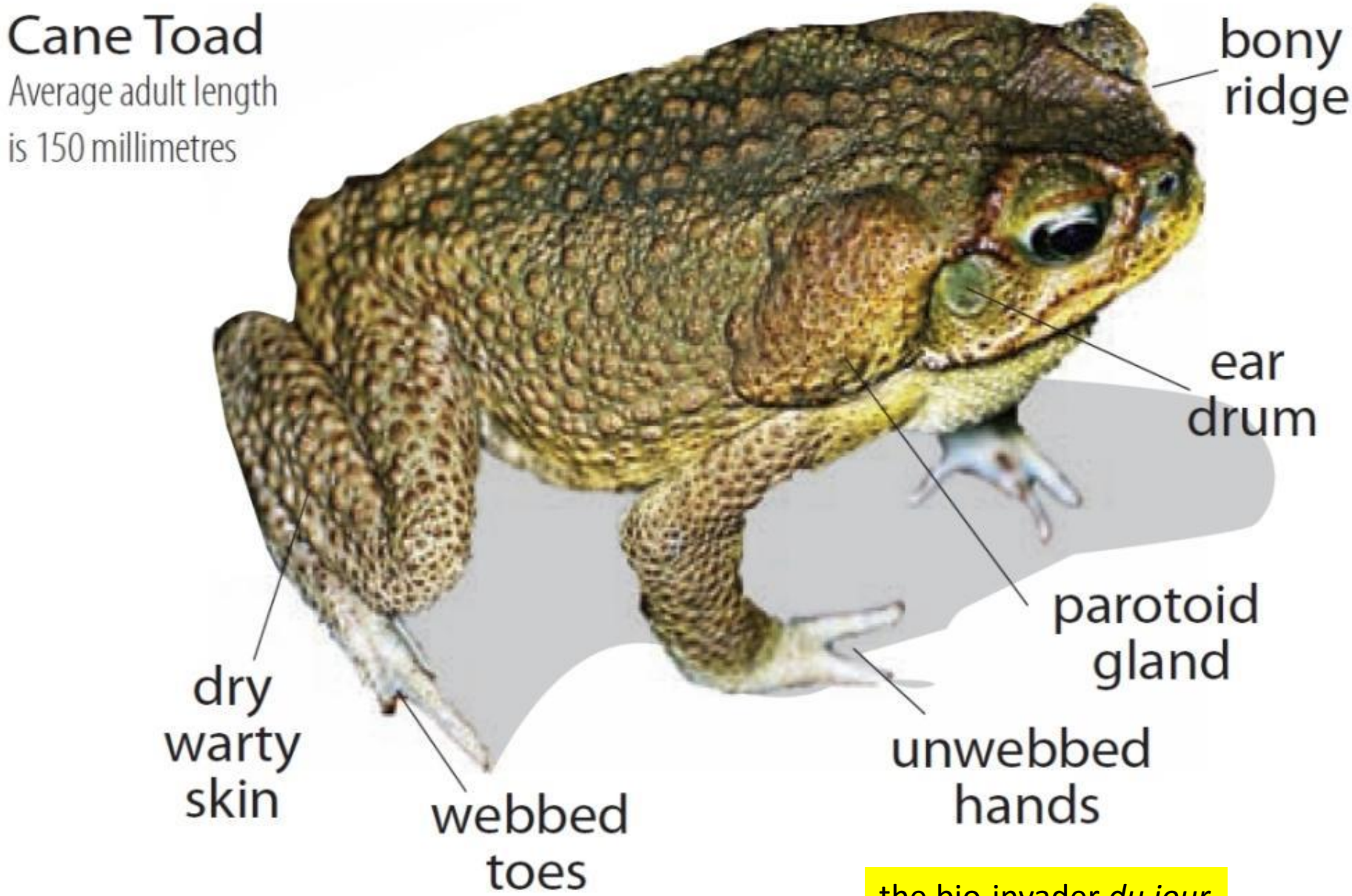
+ evolving resilience to invaders
+ direct targeting of bio-invaders

"*Leishmania* infections are characterized by the ability of some of the parasites to evade extracellular killing and enter phagocytic cells, to initially resist the antimicrobial armamentarium of macrophages, and to persist even in the presence of an intact cellular immune response of the host organism" (Bogdan *et al.* 1996: 523)

Local or systemic treatments massively reduce infectivity

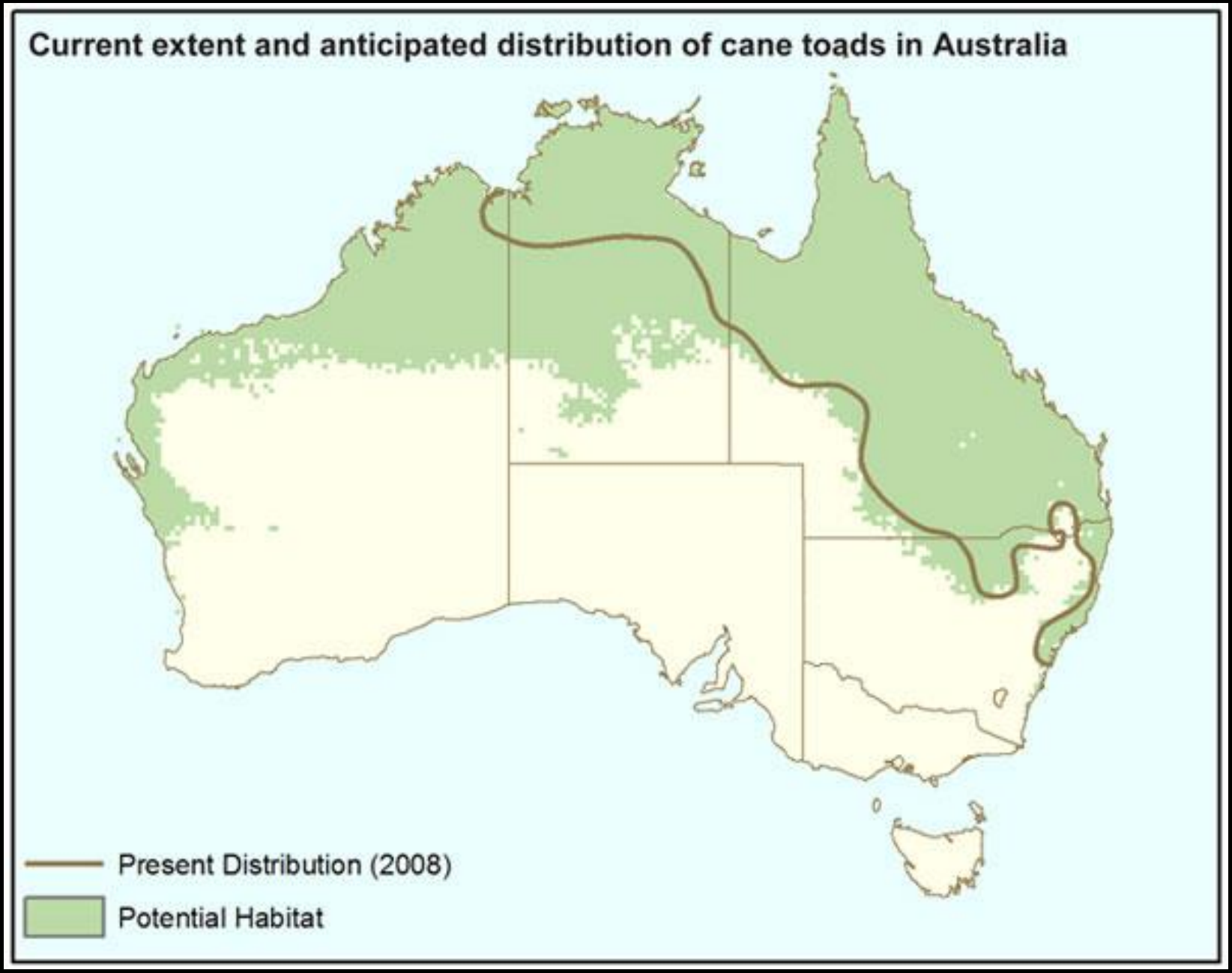
"If you know your enemies and know yourself, you will not be imperilled in a hundred battles"

Sun Tzu (maybe)

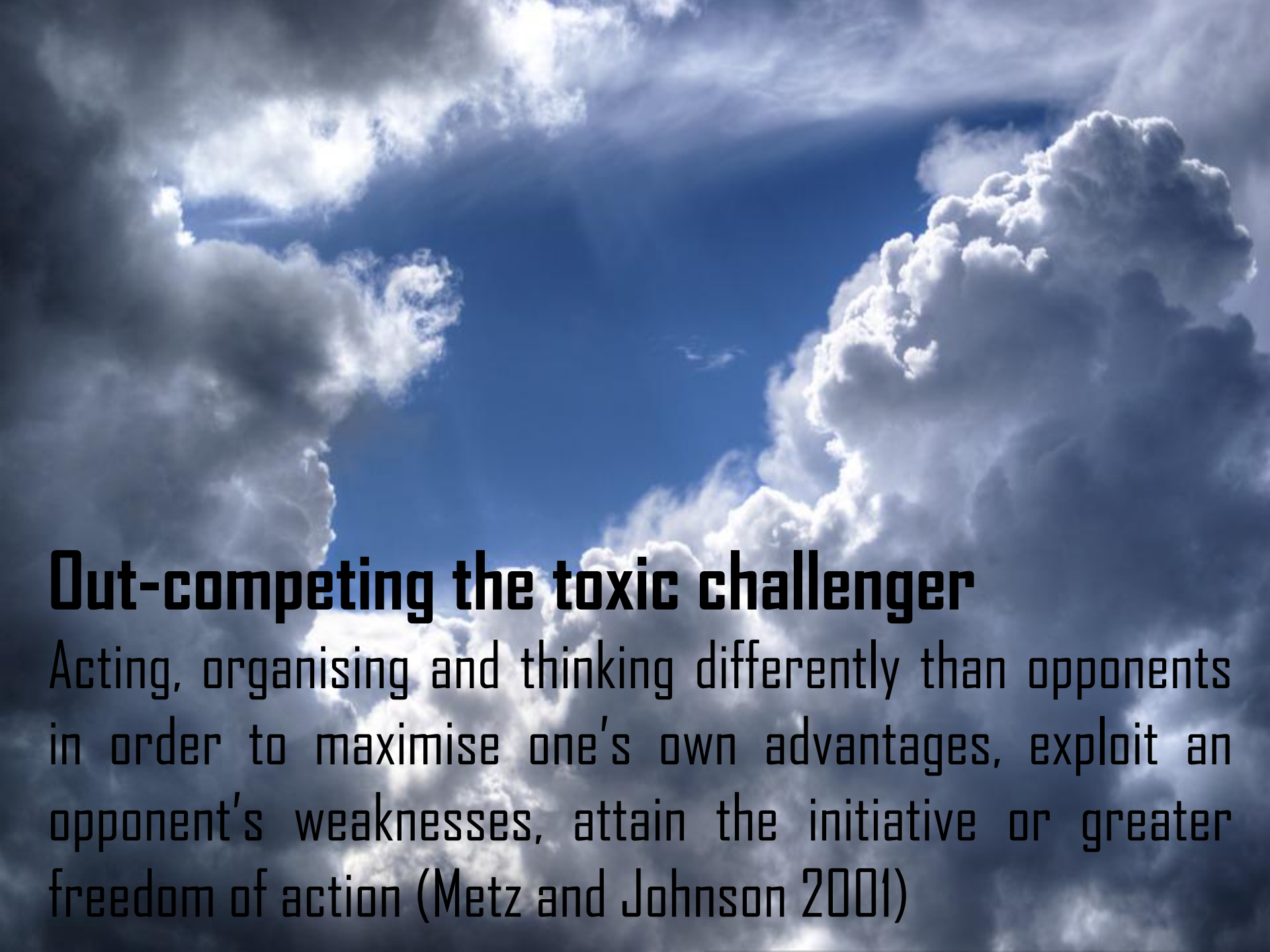


the bio-invader *du jour*

1935 – date: 40-60kms / year



http://www.environment.gov.au/biodiversity/invasive-species/publications/factsheet-cane-toad-bufo-marinus



Out-competing the toxic challenger

Acting, organising and thinking differently than opponents in order to maximise one's own advantages, exploit an opponent's weaknesses, attain the initiative or greater freedom of action (Metz and Johnson 2001)


Time for
Change
evolving resilience to invaders


Soft
underbelly


"You're toxic? That's cute ...."
... vomits a proteolytic enzyme.

Antidote


>90%
mortality

direct targeting of bio-invaders


Toad-al War

scare

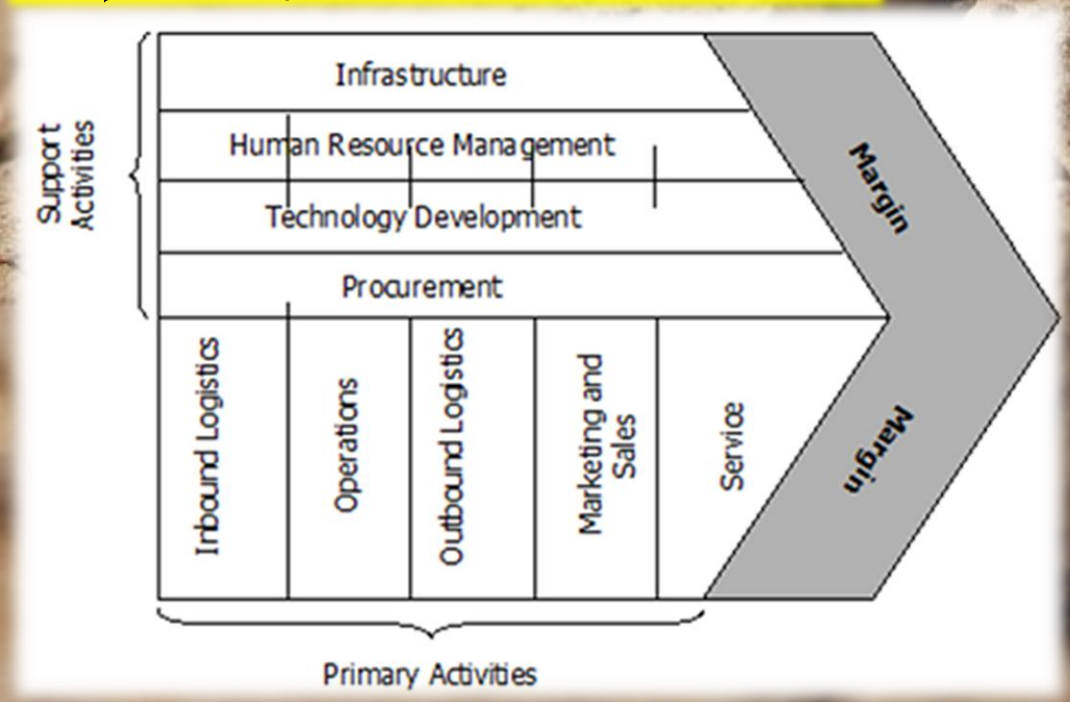
lure

stress

infect

Critical Resource Dependencies
Bio-engineering away the benign
Encouraging native resilience

Weaponising Porter's Value Chain



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Thank you