INTRASOFT INTERNATIONAL

TREK development

CSIC

CYBECO

Can protection motivation theory provide a framework to help us understand cyberinsurance uptake?

Dr Dawn Branley-Bell & Professor Pam Briggs

European Commission
HORIZON 2020

AXA TECHNOLOGY SERVICES redefining / service

TU Delft Delft University of Technology

devstat

Northumbria University NEWCASTLE

Introduction

- Cyberinsurance uptake is low
- Those that *have* adopted insurance policies report being satisfied. Suggesting that there is a need for cyberinsurance, but not a want
- No established model for explaining cyberinsurance uptake
- Assumption that people are rational decision makers
  - Behavioural Economics

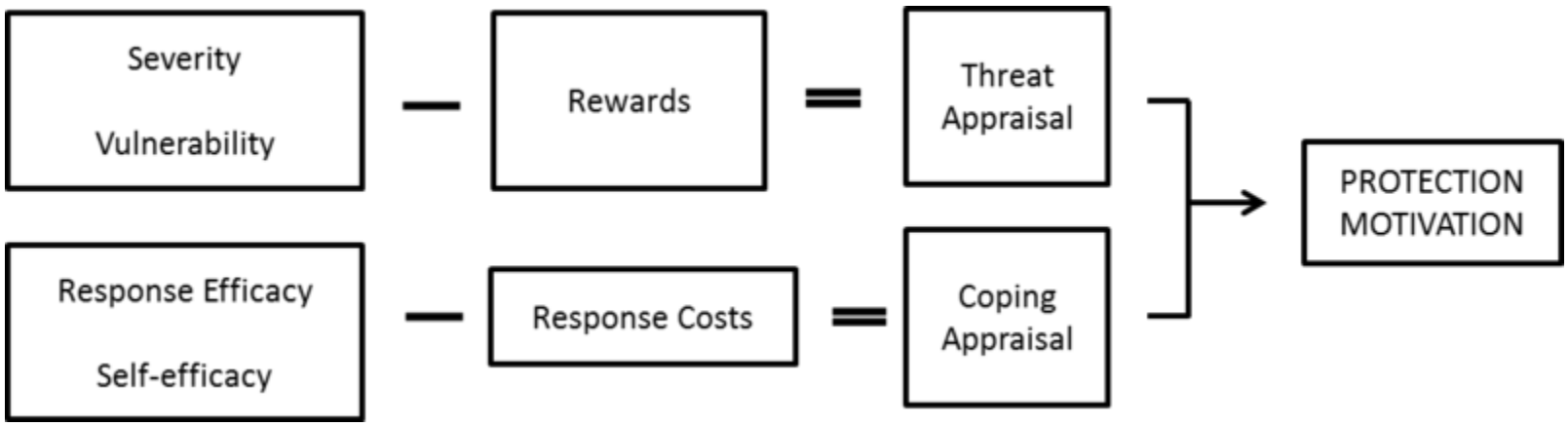
Co-funded by
the European Union

So why psychology?

- Approaches are similar, all aim to understand/predict human nature
- Mathematics and behavioural economics tends to rely more upon the rational model of behaviour
- BUT… humans do not always make rational decisions!
- Psychology has a heavier focus on contextual factors influencing decision making, e.g., beliefs and attitudes
- Approaches can be combined to compliment each other and provide a more complete model (as in the CYBECO project)

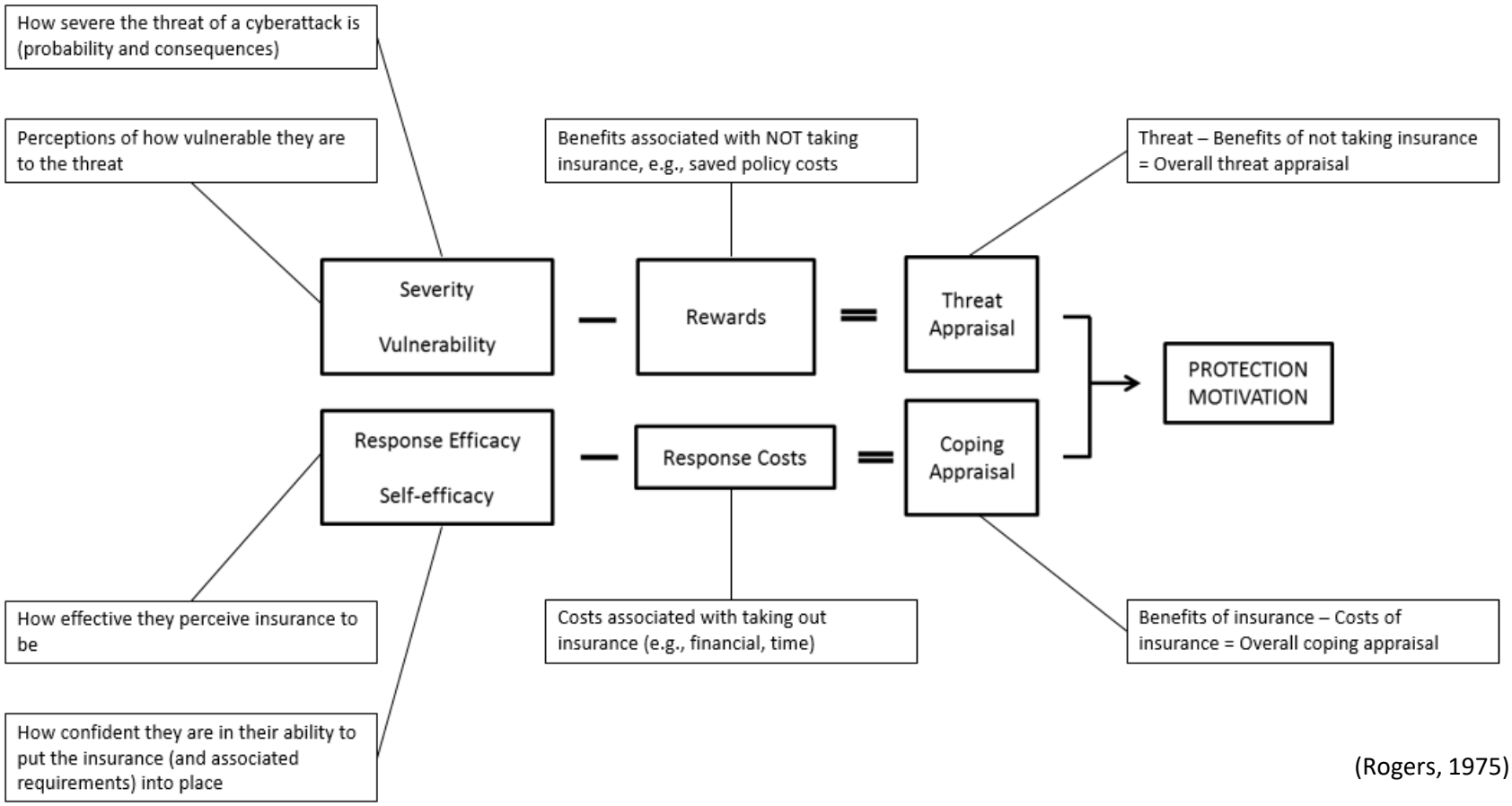
Co-funded by
the European Union

Protection Motivation Theory (PMT)



Co-funded by the European Union

Protection Motivation Theory (PMT)

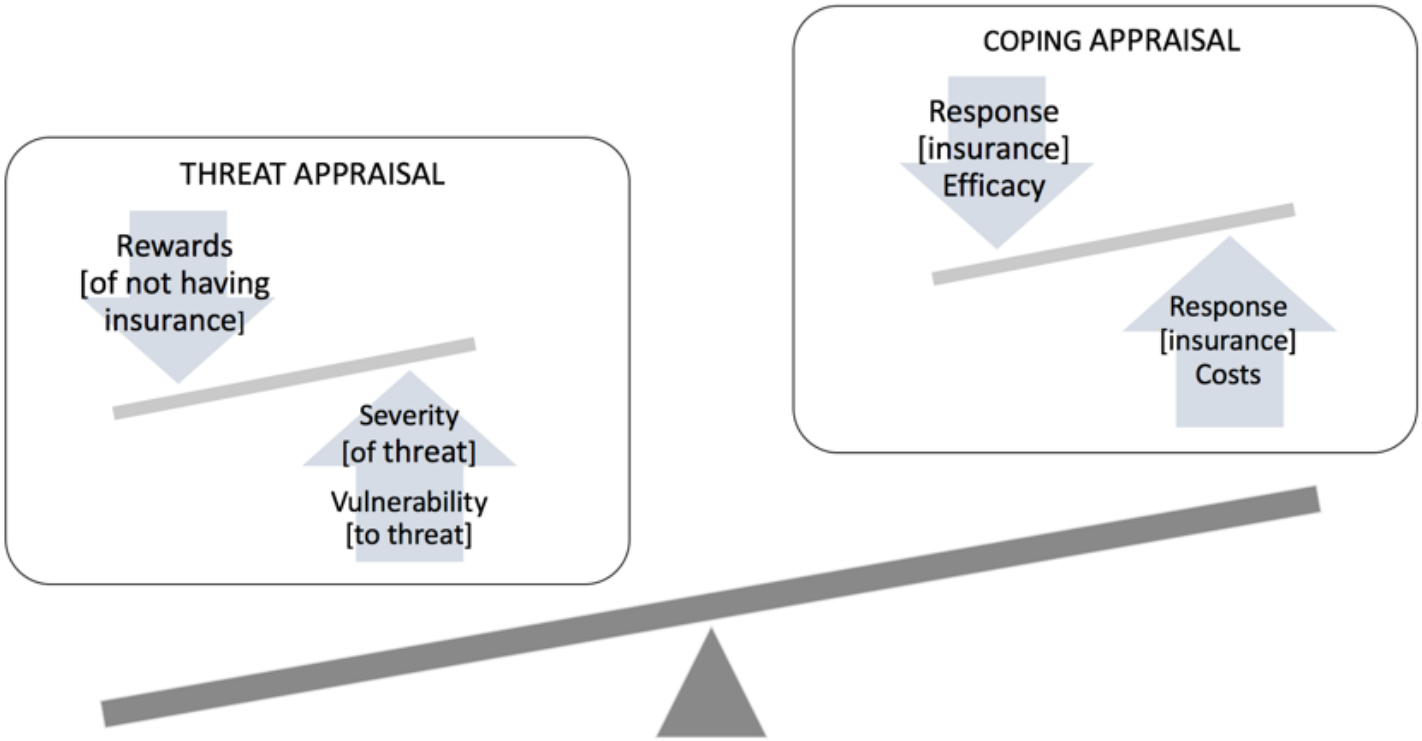


(Rogers, 1975)

CYBECO

Co-funded by the European Union

PM Theory: Benefit-Risk Analysis (or Cost-Benefit Tradeoff!)



Co-funded by the European Union

What factors may influence cyberinsurance uptake?

Low Awareness

Inaccurate Perceptions of Risk

Negative Attitudes Towards Insurance

Concerns Around Disclosure

Policy Exclusions & Limits

Policy Pricing

Required Time, Resources & Expertise

CYBECO

Co-funded by the European Union

How do these factors fit with PMT?

"It wouldn't happen to us"
"Well it hasn't happened so far"
→ Decrease in vulnerability
Decrease in severity
→ DECREASE in THREAT APPRAISAL

Factor	
Low awareness	↓ Threat appraisal (via ↓ severity & ↓ vulnerability)
Inaccurate perceptions of risk	↓ Threat appraisal (via ↓ severity & ↓ vulnerability)
Negative attitudes towards cyberinsurance	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↓ response efficacy and ↑ response costs)
Concerns about breach disclosure	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↑ response costs)
Policy exclusions and limits	↑ Coping appraisal (via ↓ response efficacy)
Policy pricing	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↑ response costs)
Time, resources & expertise	↑ Coping appraisal (via ↓ self-efficacy and ↑ response costs)

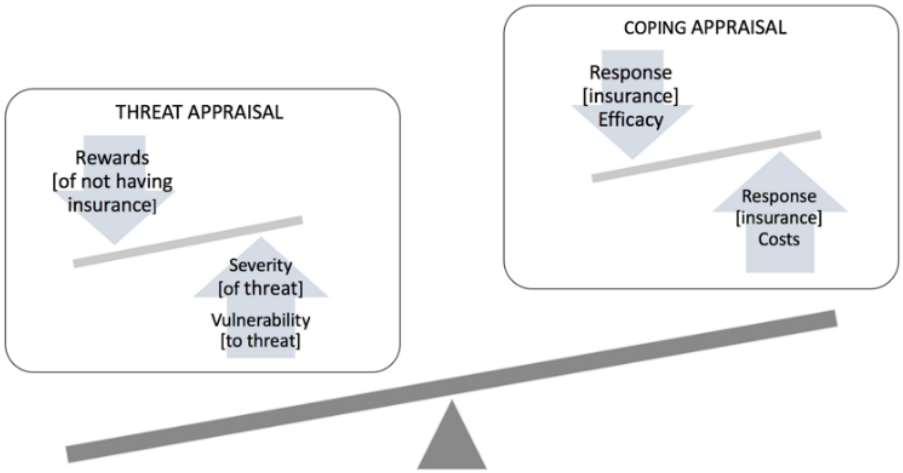
"I don't trust the insurer to pay out"
"Insurance blocks productivity"
→ Decrease in response efficacy
Increase in response costs
→ INCREASE in COPING APPRAISAL

CYBECO
Co-funded by the European Union

How do these factors fit with PMT? (Cont.)

Factor	
Low awareness	↓ Threat appraisal (via ↓ severity & ↓ vulnerability)
Inaccurate perceptions of risk	↓ Threat appraisal (via ↓ severity & ↓ vulnerability)
Negative attitudes towards cyberinsurance	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↓ response efficacy and ↑ response costs)
Concerns about breach disclosure	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↑ response costs)
Policy exclusions and limits	↑ Coping appraisal (via ↓ response efficacy)
Policy pricing	↓ Threat appraisal (via ↑ rewards of <u>not</u> having insurance) ↑ Coping appraisal (via ↑ response costs)
Time, resources & expertise	↑ Coping appraisal (via ↓ self-efficacy and ↑ response costs)

Lower Threat Appraisal
+ Higher Coping Appraisal
= Less motivation to purchase cyberinsurance!



CYBECO
Co-funded by the European Union

So what?

- Strong basis for development of interventions, policies, security protocols and training
- Highlights need to influence threat appraisal and/or coping appraisal (and the factors that may achieve this!)
- May help increase motivation to purchase cyberinsurance

Co-funded by
the European Union

Thank You

Any Questions?

Dr Dawn Branley-Bell
dawn.branley-bell@northumberia.ac.uk
Personal Twitter: @TheCyberPsyche
CYBECO Project Twitter: @CYBECO_project

CYBECO
Co-funded by the European Union