

Based on Past Experience: Highlighting Potential Human Value Issues in Domain Modelling

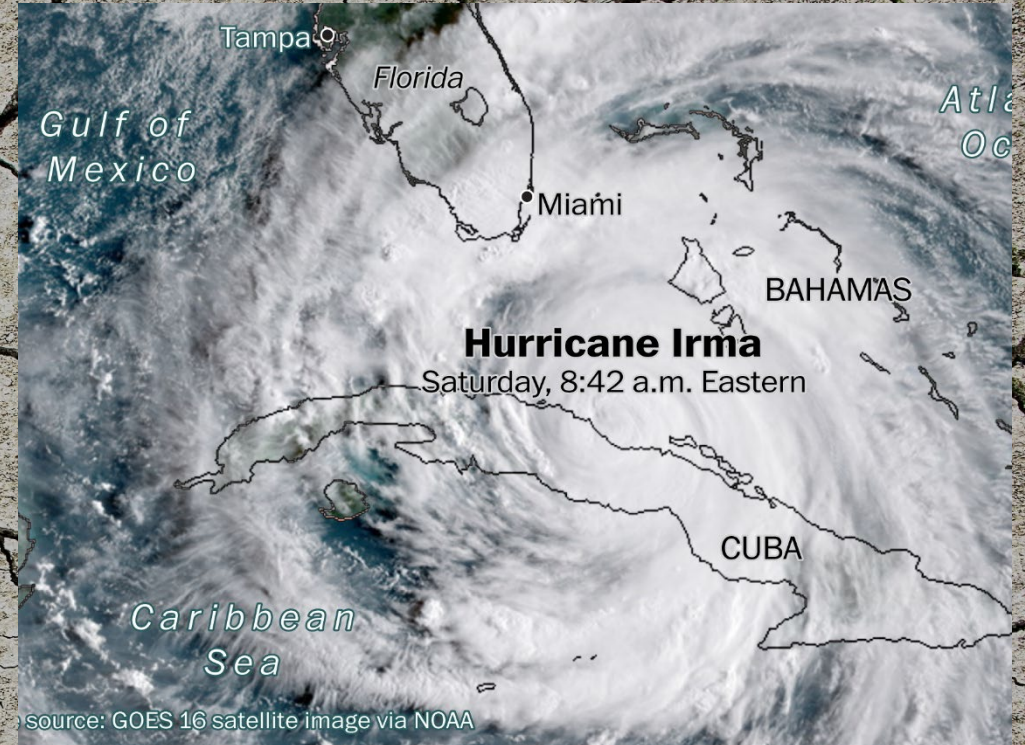
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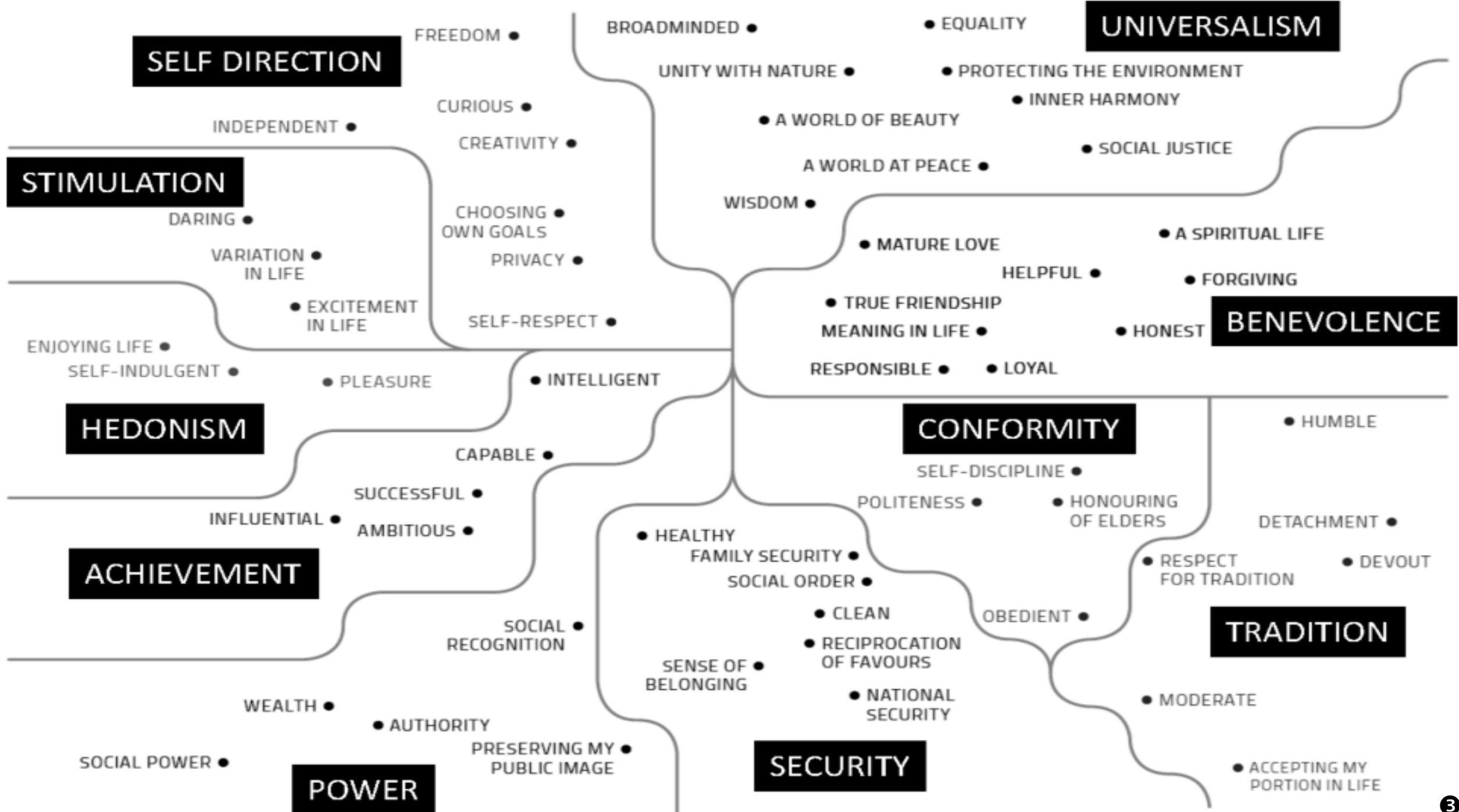




Values
Calmness Carefulness
Competence Achievement Diversity
Learning Determination
Responsibility Adventure Self-reliance
Altruism Loyalty Discipline Resourcefulness
Artistry Acceptance Sincerity
Discretion Self-respect Love Selflessness
Self-control Sensitivity Articulacy Kindness
Accountability Accuracy
Respect Flexibility
Creativity



value breaches may have devastating implications



Is Your Software Valueless?

2019

Jon Whittle

Continual Human Value Analysis in Software Development: A Goal Model Based Approach

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A Case for Human Values

2021

Shams,
Whittle
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monash.edu

2020

How Can Human Values be Addressed in Agile Methods? A Case Study on SAFe

2022

Waqar Hussain^{id}, Mojtaba Shahin^{id}, Rashina Hoda^{id}, Jon Whittle^{id}, Harsha Perera^{id},
Arif Nurwidyantoro^{id}, Rifat Ara Shams^{id}, and Gillian Oliver^{id}

Jon Whittle, CSIRO's Data61

Maria Angela Ferrario and Will Simm, Lancaster University

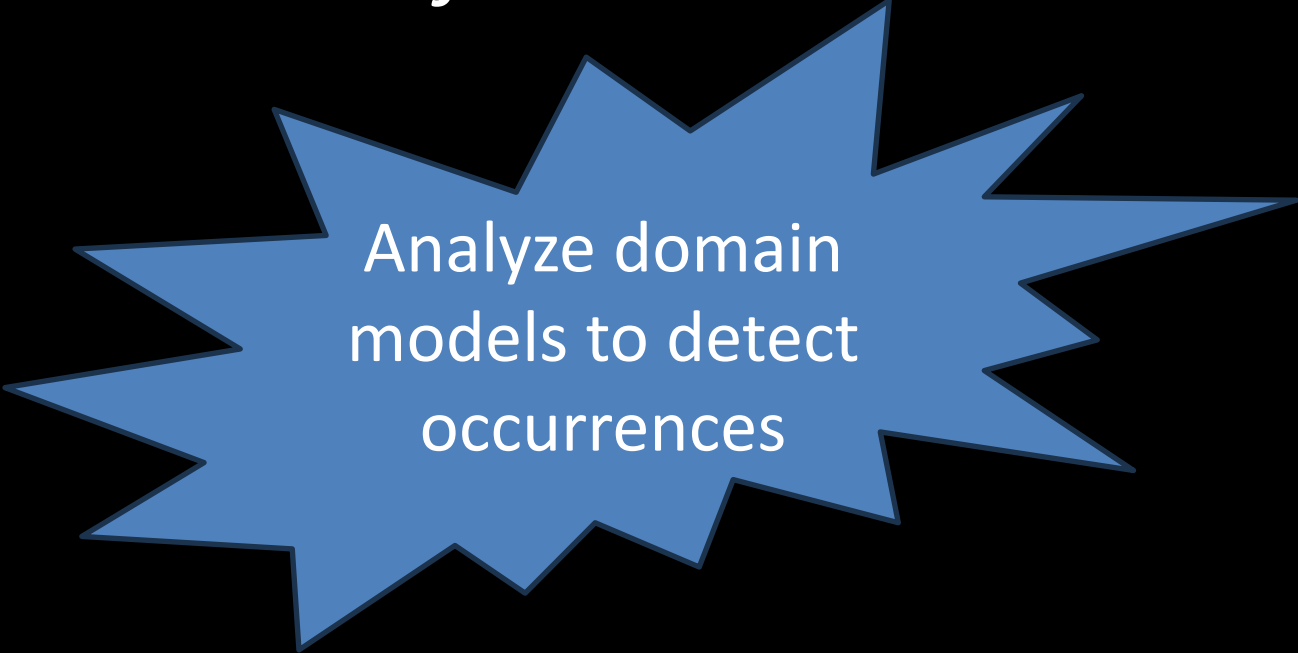
Waqar Hussain, Monash University

MoDRE'19: pilot study with **domain models**

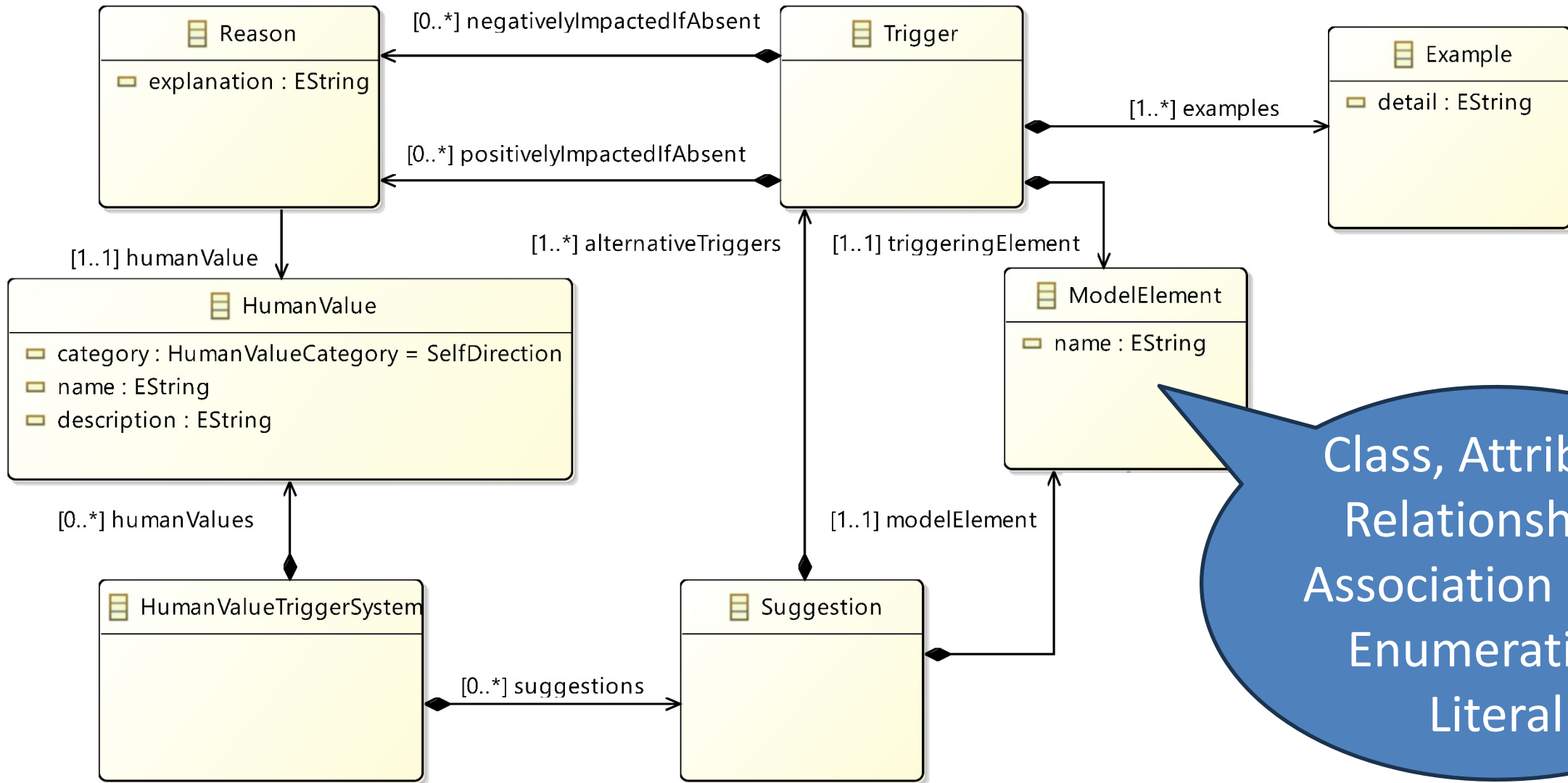
A value breach **can be attributed** to missing domain model elements

A **significant** number of human values are reflected in domain models

W e want to collect *experiences* with domain models (potential value breaches) from past projects to avoid them in the future



Analyze domain models to detect occurrences



Class, Attribute, Relationships, Association Class, Enumeration, Literal

DSL: impact of model elements on values + mitigation


```
HumanValue Universalism.BroadMindedOrTolerance
  'Liberal in views and reactions'
HumanValue Universalism.SocialJustice 'Everyone
  deserves equal economic, political, and
  social rights and opportunities'
```

```
Attribute Time 'User'.timeYouWantToSpend
Trigger Class User
```

```
  Example 'People may get addicted to
  WhatsApp, doing the same thing repeatedly
  which may result in reduced (or no)
  interaction with other people'
```

```
  negIfAbsent Creativity because 'People
  addicted to social media keep on doing the
  same thing every day, which kills
  creativity'
```

```
  negIfAbsent Curious because 'People
  addicted to chatting may not read up on
  news or current topics or study for their
  course'
```

```
  negIfAbsent AVariedLife because 'People
  addicted to WhatsApp are doing the same
  thing over and over again'
```

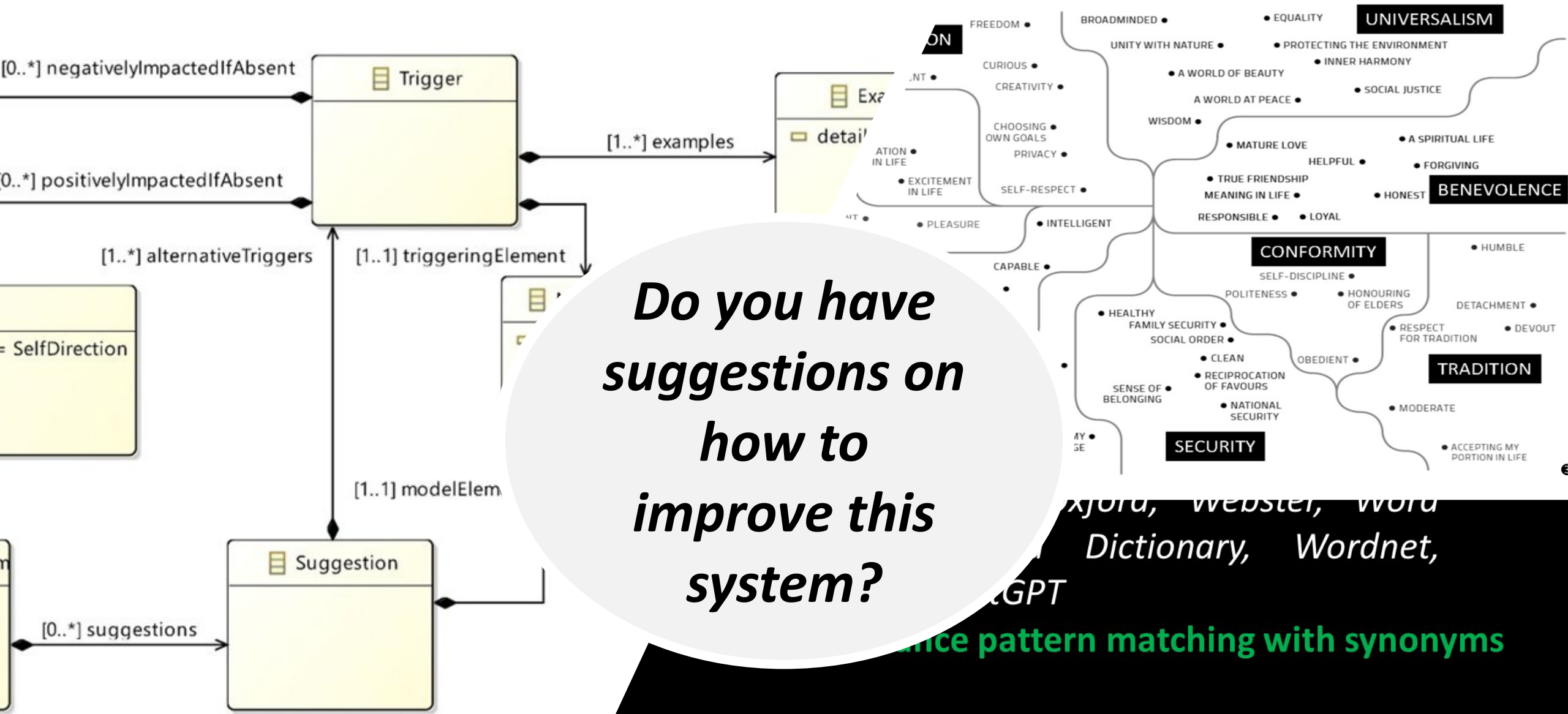
textual syntax for the DSL – concrete example

*S*ynonym services: Oxford, Webster, Word Association, Word Dictionary, Wordnet, Wordnik, GloVe, ChatGPT

enhance pattern matching with synonyms

*A*utomated synonym retrieval vs. interactive synonym retrieval

Webster + Word Dictionary ♦ Oxford or ChatGPT



Do you have suggestions on how to improve this system?

set of model elements of

Automated synonym retrieval vs. interactive synonym retrieval

Webster + Word Dictionary + Oxford or ChatGPT

Dictionary, Wordnet, GPT
 pattern matching with synonyms