



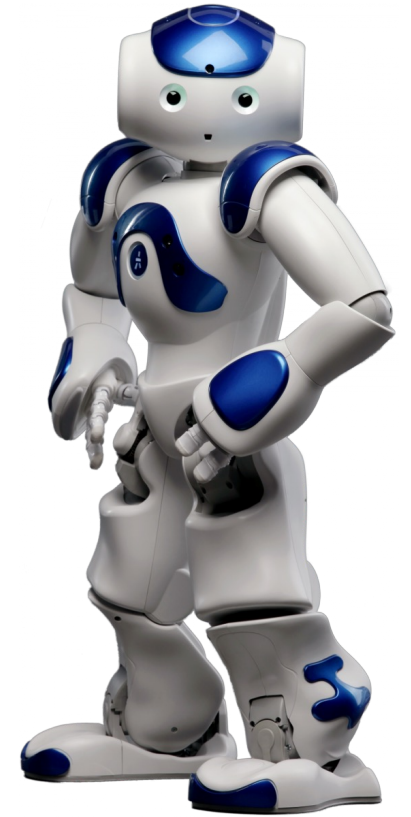
**UNIVERSITY  
OF TWENTE.**

**HUMAN-MACHINE ALIGNMENT VIA PERSON-  
CENTERED MODELS, METHODS AND MEANING  
MAKING**

SYMPOSIUM NOVEMBER 21<sup>ST</sup> 2022: BEING HUMAN IN THE DIGITAL SOCIETY: ON  
TECHNOLOGY, NORMS AND US

**M. BIRNA VAN RIEMSDIJK**

# Motivation (2013): increasing interwovenness of people and digital technologies

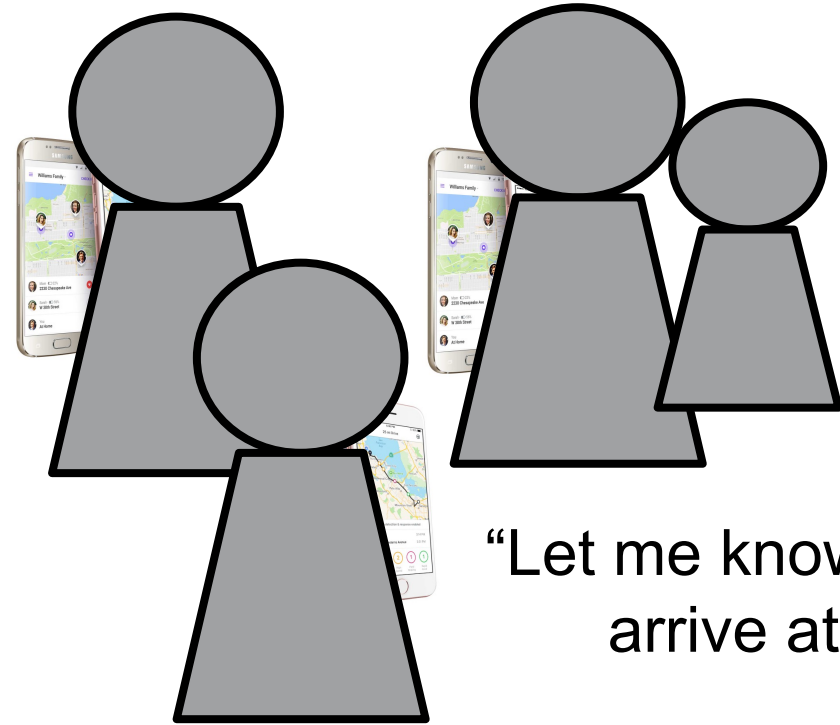


# Software should “understand norms and values of people”

“I want to do sports twice a week”



Norm: (inter)personal  
rule of behavior



“Let me know when you  
arrive at home”

“We have a lunch  
meeting tomorrow”

Software that “understands” norms and values of people

?

# YUVAL HARARI WARNS HUMANS WILL BE "HACKED" IF ARTIFICIAL INTELLIGENCE IS NOT GLOBALLY REGULATED

"To hack a human being is to get to know that person better than they know themselves. And based on that, to increasingly manipulate you," Harari says.



Beauty

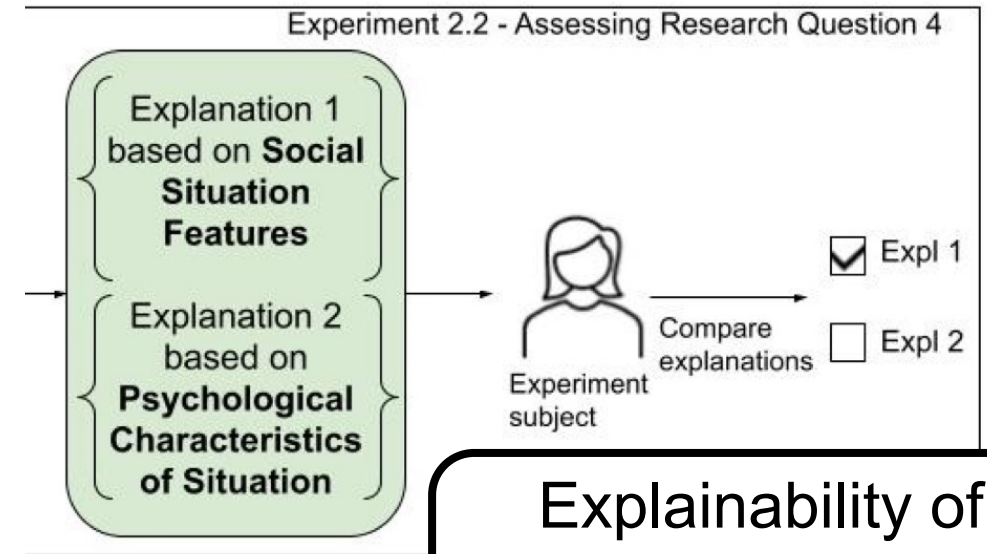
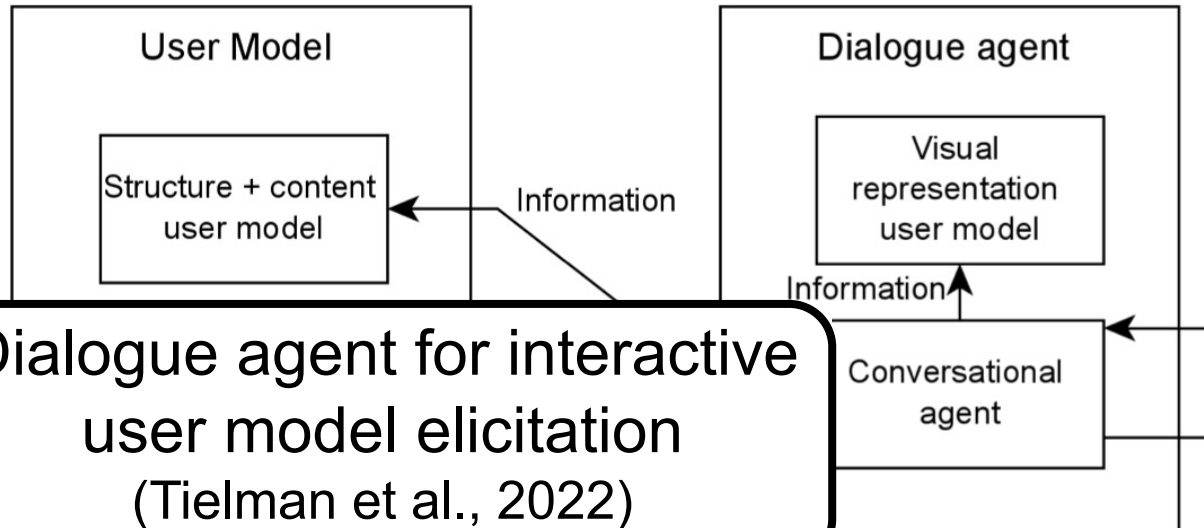
Friendship

Care

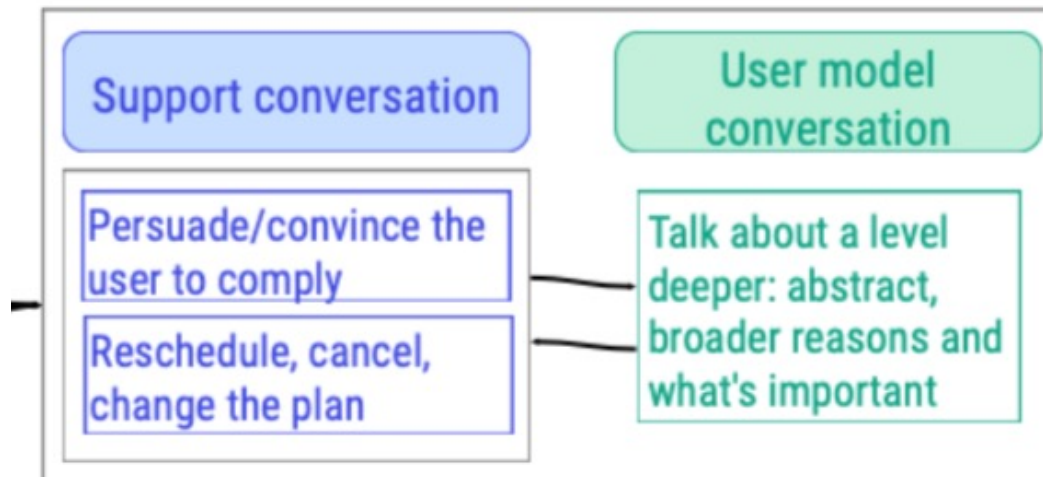




# REQUIREMENT 1: INTERACTIVE MEANING MAKING



Explainability of support advice  
(Kola et al., 2022)



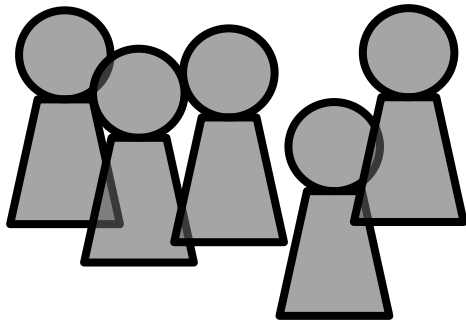
Software that understands norms and values of people

Software that ~~understands~~ takes into account norms and values of people

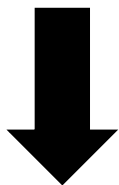
Software that ~~understands~~ takes into account personal norms and values of people

# Societal values

Fairness, equity, non-discrimination,  
democracy, sustainability, ...



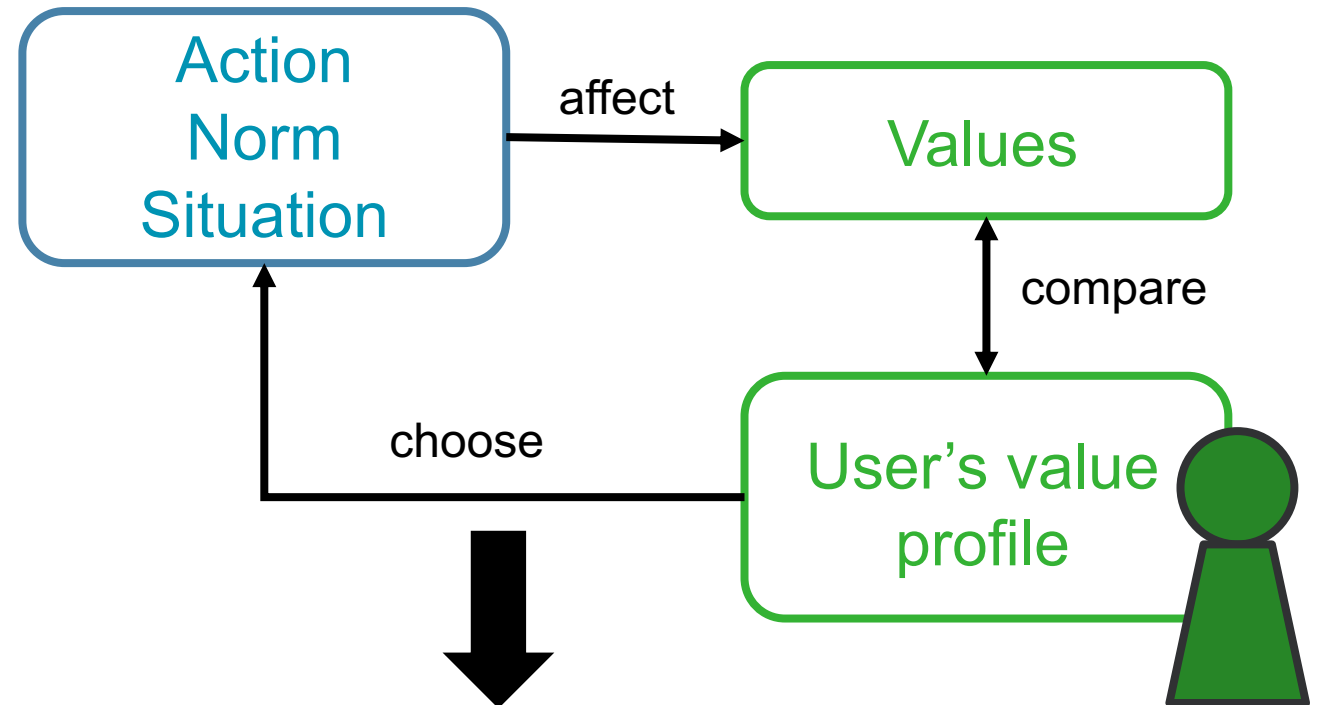
Platform



Value alignment emerges from  
multitude of (socio-technical)  
system actions

# Personal values

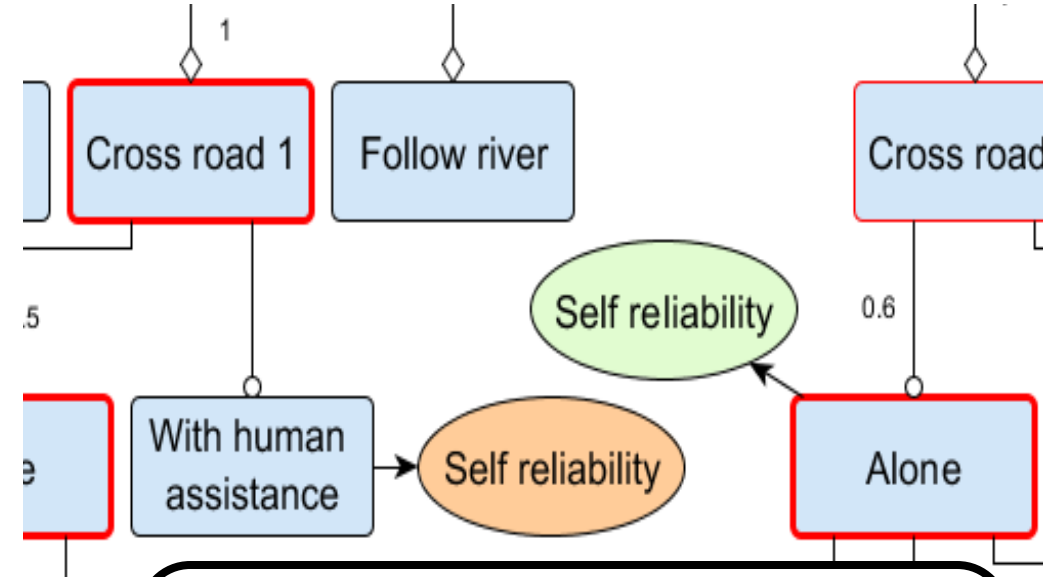
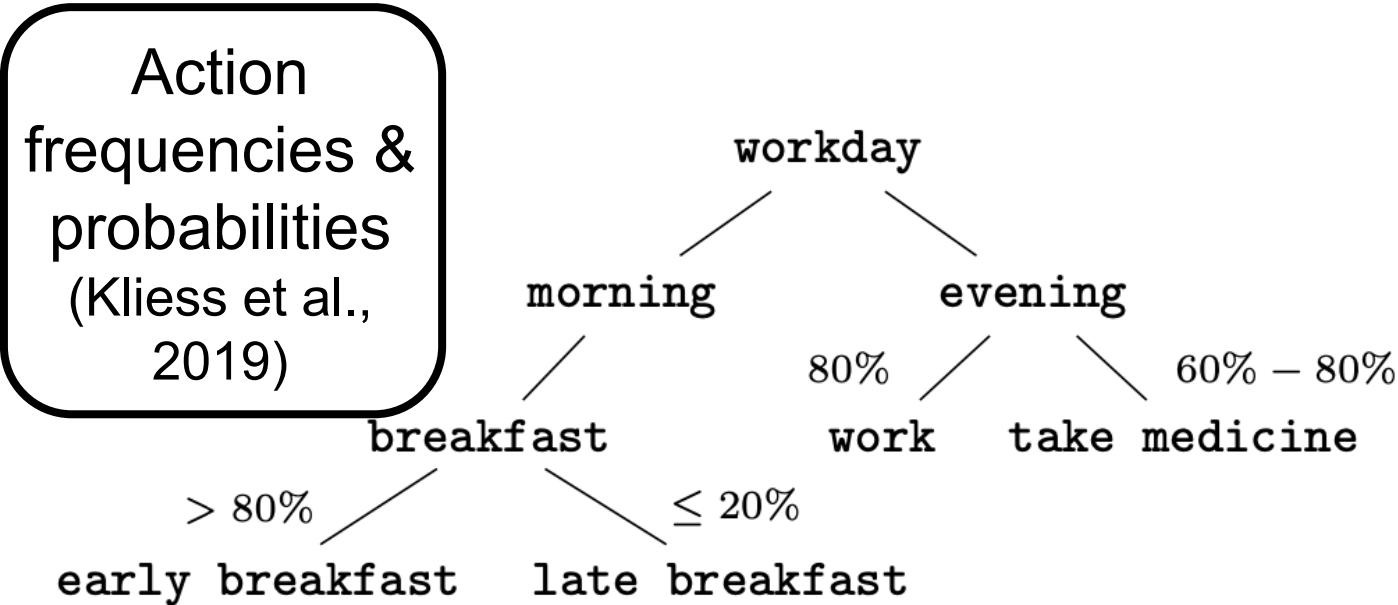
Friendship, health, independence,  
safety, wealth, comfort, ...



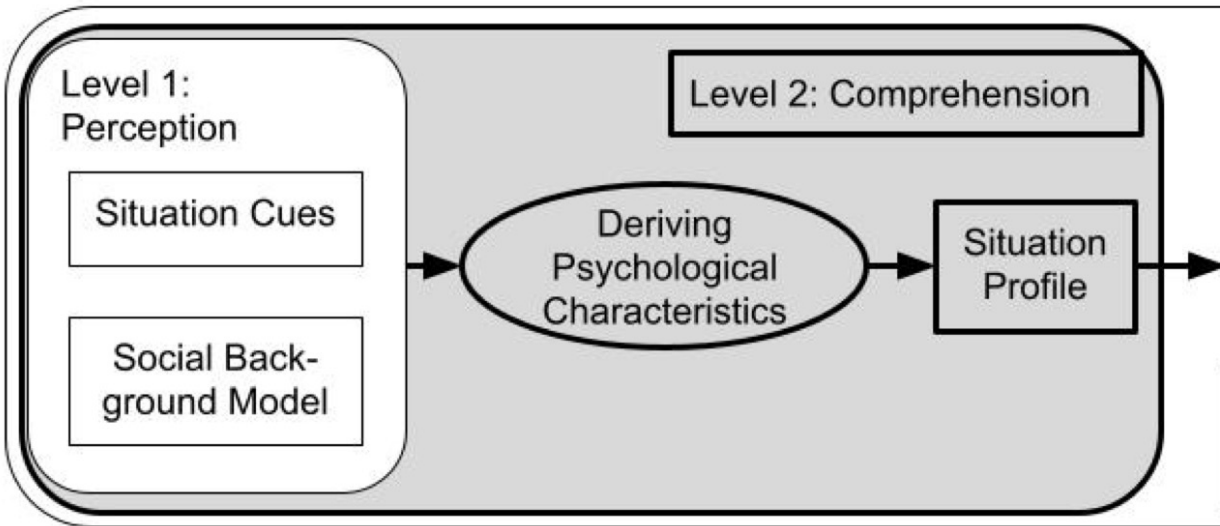
Value alignment based on  
mapping between user &  
system actions and values



# REQUIREMENT 2: MEANINGFUL MODELS



Semantic User Models:  
Actions, values, context  
(Tielman et al., 2018, 2022)



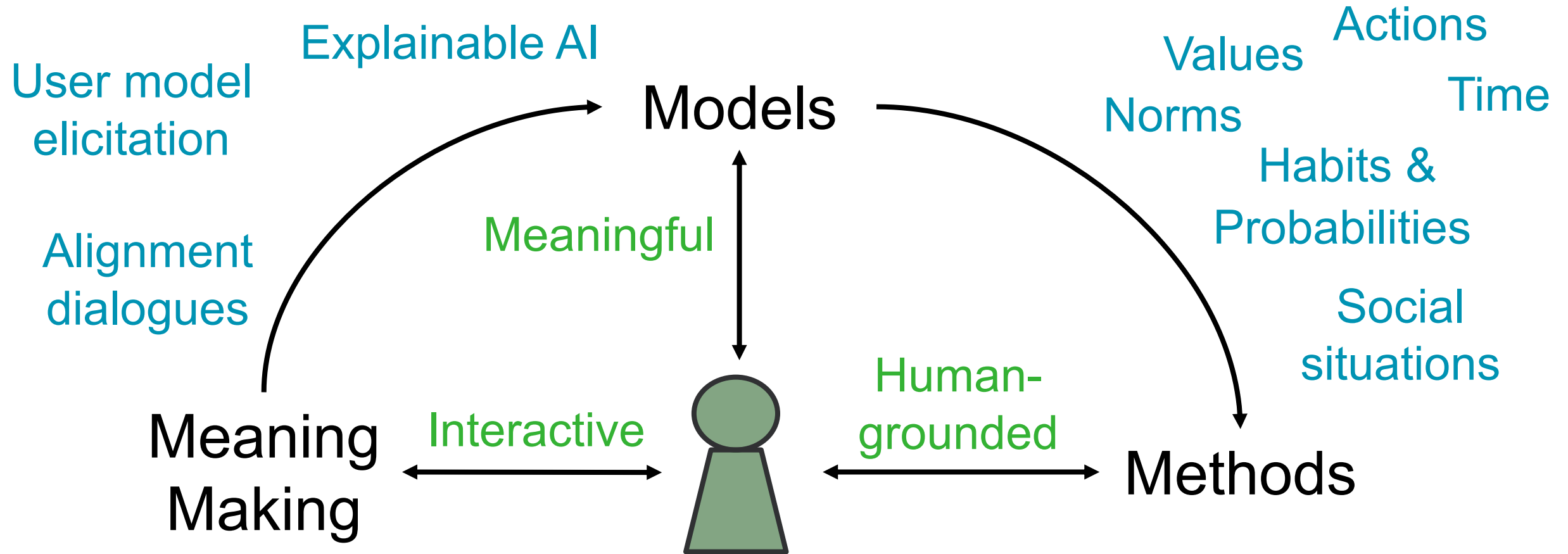
Social situation awareness based on social features and psychological characteristics of a situation  
(Kola et al., 2020-2022)

# REQUIREMENT 3: HUMAN-GROUNDED METHODS

Foundation	Social Science	Focus groups	User data
Specification	Meaningful models		
Evaluation	User studies	Predictive accuracy	Formal analysis

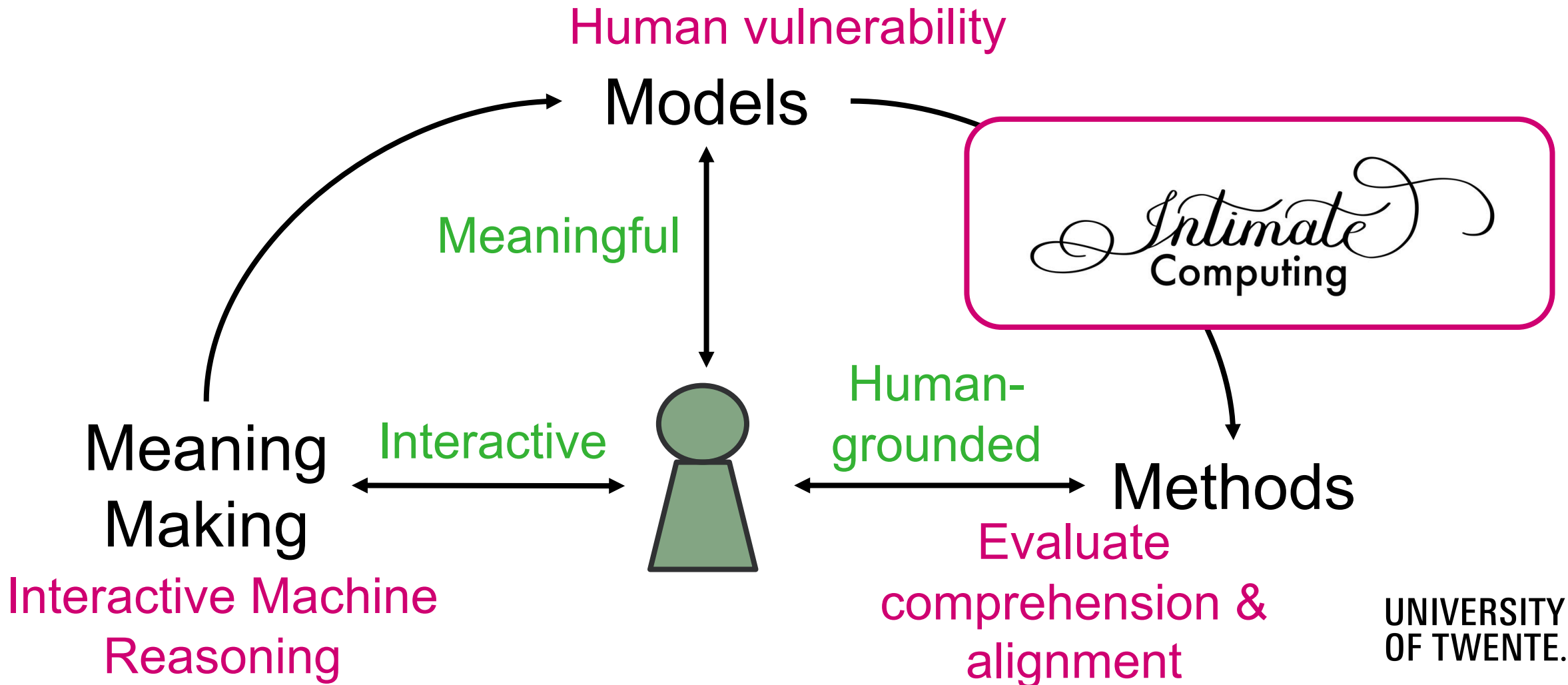
Based on: situated Cognitive Engineering (Neerincx et al., 2008)

# HOW TO REALIZE SOFTWARE THAT TAKES INTO ACCOUNT PERSONAL NORMS AND VALUES?





# INTIMATE COMPUTING IS COMPUTING WITH VULNERABILITY



# TOWARDS A CARING AND INSPIRING DIGITAL SOCIETY!





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Dr. Myrthe Tielman



Ilir Kola



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- Jakub Berka
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- Zdenek Mikovec
- Pradeep Murukannaiah
- Luca Nannini
- Pietro Pasotti
- Marielle Stoelinga
- Michael Winikoff

