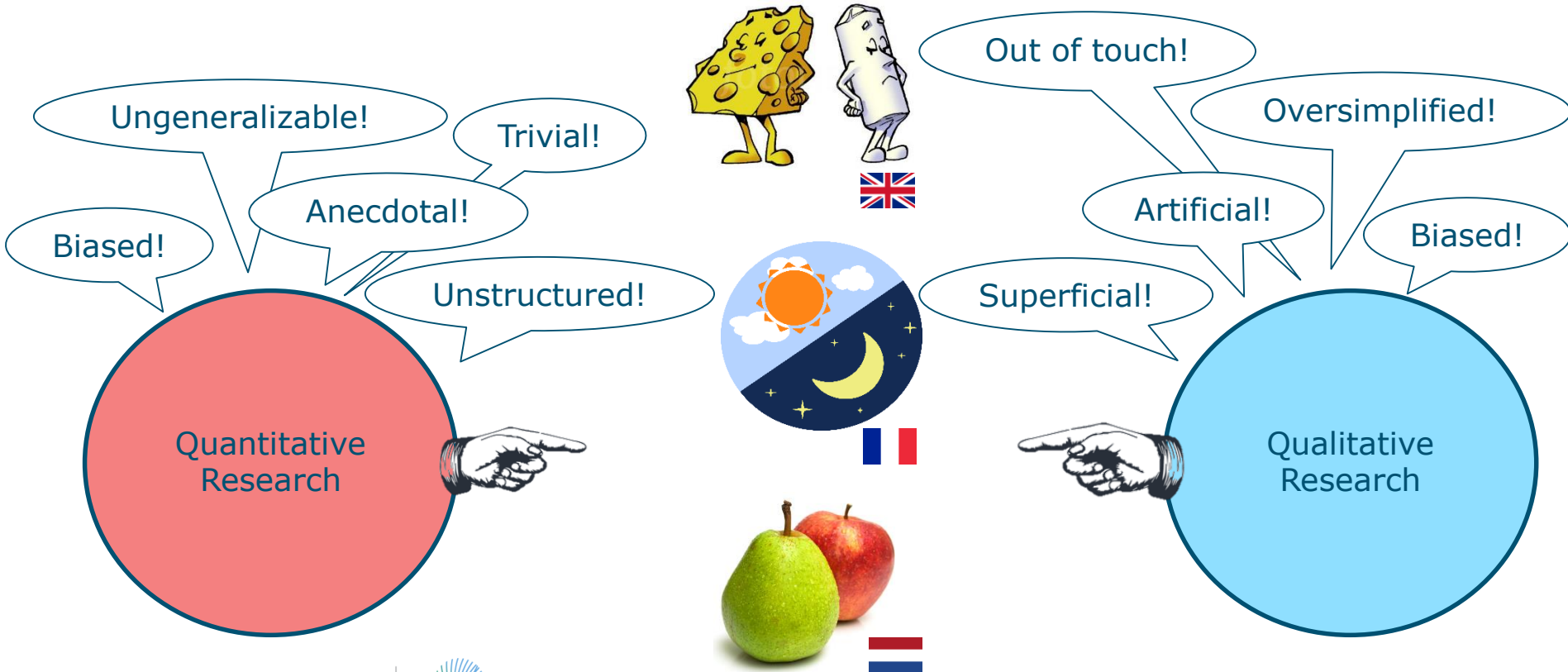# CLASSIFYING FISHER BEHAVIOUR IN THE NETHERLANDS

Understanding fisher behaviour through mixed methods social science

26 June 2019, MARE People and the Sea Conference, Amsterdam

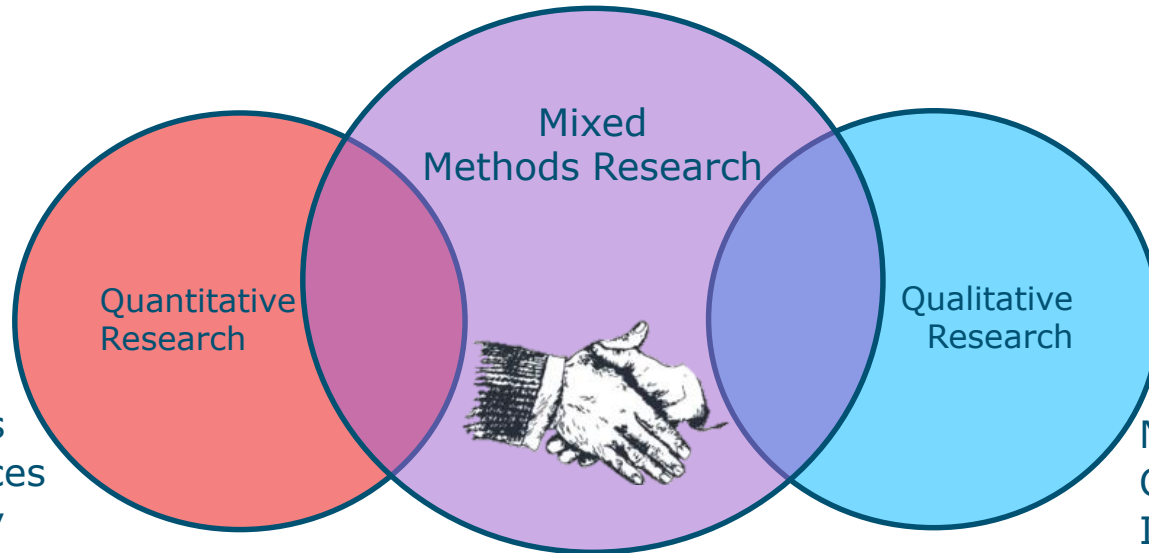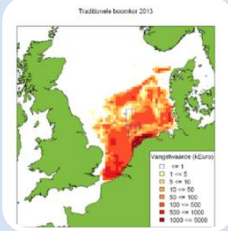Amanda Schadeberg, Marloes Kraan, Katell Hamon, Jan Jaap Poos & Jurgen Batsleer

© Harmen van der Werf

WAGENINGEN
UNIVERSITY & RESEARCH

100 years
1918 — 2018

Two worlds?

Combining strengths

Structured analysis
Conceptual coherence
Elaboration on causes and effects
Informed methodological decision-making

Mixed
Methods Research

Quantitative
Research

Qualitative
Research

Large data sets
Causal inferences
Generalisability

Narrative understanding
Context-specific
Inductive reasoning

Why study fisher behaviour?

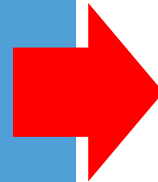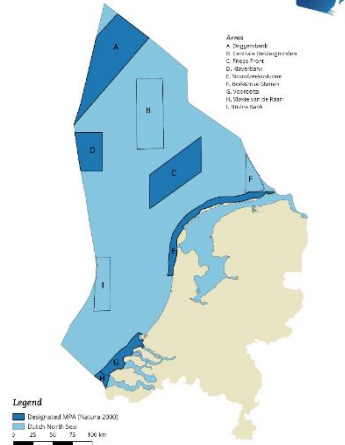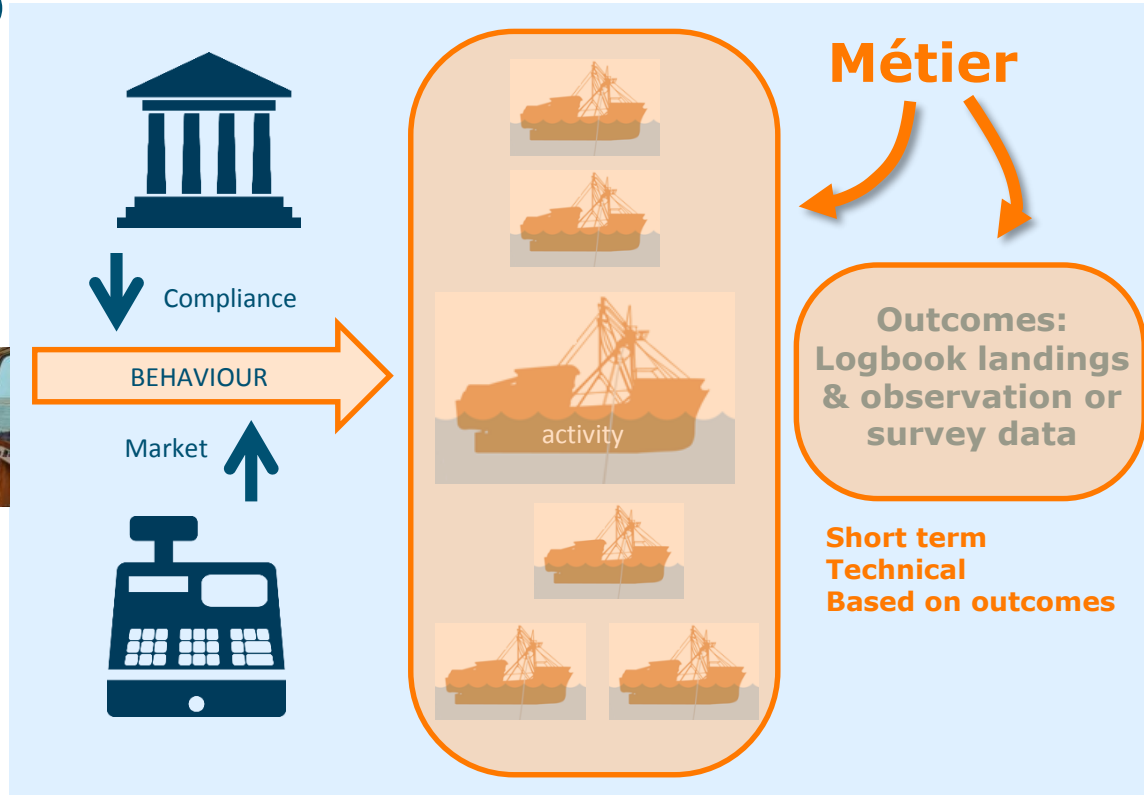|			
Human behaviour key source of uncertainty (Fulton et al 2010)	Homo economicus	We *infer* behaviour from outcomes of fishing. Need to *understand* behaviour	Context of change

MIXED METHODS

Understanding fisher behaviour

Crew

Habits

History

Worldview

Fisheries tradition

Family

Livelihood

Knowledge

Community

Compliance

BEHAVIOUR

Market

activity

Métier

Outcomes: Logbook landings & observation or survey data

Short term
Technical
Based on outcomes

WAGENINGEN
UNIVERSITY & RESEARCH

100 years
1918 — 2018

Boonstra & Hentati-Sundberg (2016) offer a solution

Fishing styles:

Patterns of actions, which aim to create congruence between *normative notions about how fishing should be practiced*, and *fishers' dependence on different social and ecological contexts*

What the fisherman himself thinks of his behaviour

The external factors that motivate fisher behaviour

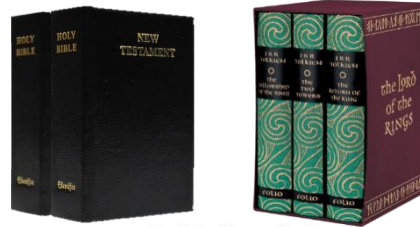# The Boonstra & Hentati-Sundberg (2016) method

320,000 trips
2001-2016
PCA and MCA
clustering
Pelletier & Ferraris
(2000)

Focus group with
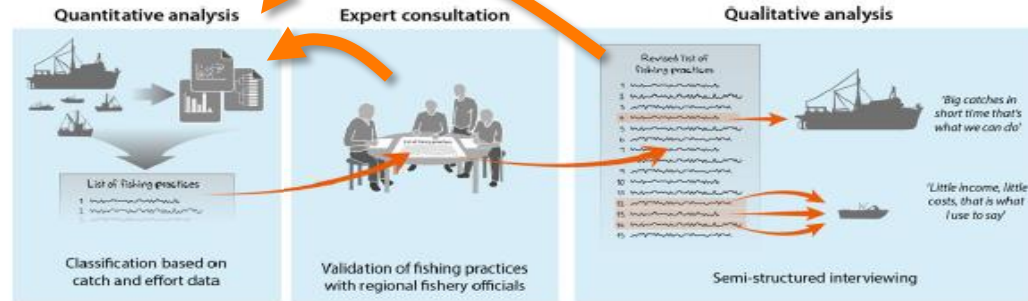fisheries experts

28 interviews with fishers
415,000 words

Quantitative analysis

List of fishing practices
1 ......
1 ......

Classification based on
catch and effort data

Expert consultation

Revised list of
fishing practices

Validation of fishing practices
with regional fishery officials

Qualitative analysis

'Big catches in
short time that's
what we can do'

'Little income, little
costs, that is what
I use to say'

Semi-structured interviewing

Results:

Similar to métiers

16 Practices (trip-level behaviour)

6 Fishing Styles (lifelong factors)

	Urkers	Texelaars/Wieringers	South Hollanders	Zeelanders	Rederijen	Continuous fishers
Home port	UK	TX, WR	SCH, GO, OD	ARM	Any	Any
Business structure	Family	Family	Family	Family	Company	Family or company
Openness to innovation	High	High	Mixed	Low	High	High
Skipper Motivation	Identity	Freedom	Freedom	Mixed	"I just like it"	Money
Religiosity	High	High	High	High	-	-
Succession	Sons	Uncertain	Sons	Sons	Mixed	Mixed
Preferred fishing grounds	English waters	Dogger bank	Holland coast	Southern North Sea	Multiple	Multiple
Connection to grounds	Moderate	High	Moderate	High	None	None
Practices	1, 2	2	2	3	1	1, 2, 3

One métier: TBB_70-90_DEF

	Demersal 1	Demersal 2	Demersal 3
Gear	TBB 80mm	TBB 80mm	TBB 80mm
Vessel length	34m	41m	29m
Seasonal	No	Yes	Yes
Days at sea	6	5	4
Total catch	13.4 ton	9.6 ton	3.7 ton
Plaice	62%	52%	22%
Sole	6%	21%	26%
Area	37F2	32F2	32F3

So what did we actually talk about?

- Village
- Entry to fishery
- Motivation
- Crew relationships
- Outlook on the future
- Tradition and history
- **Religion**
- Farmer or hunter?
- Succession
- What they think of other fishers
- What they think of regulations
- What they think of science

- Age
- Connection to place at sea
- Quota status
- Financial position
- Adaptive/reactive
- Work-life balance
- Identity-fishery entanglement
- Business structure
- EMK membership (Fisher's NGO/lobby)
- Where they usually fish
- Discards
- Target species
- Gear

WAGENINGEN
UNIVERSITY & RESEARCH

100years
1918 — 2018

How does religion affect behaviour?

"We are... in Urk [fishing village] most people are religious, are Christian. They don't fish during the weekend and on Sundays. I also don't. I have never fished on Sunday [...] Yes, there are of course people who go seven days in the week. Yes, it earns more money."

How the fisher thinks fishing *should* be done

"You can have religious reasons not to fish on the weekend, and then you can have economic reasons to do it anyway, but you can also have biological reasons not to do it" – Urk skipper

Dependence on social context

Dependence on ecological context

Incentive to defy contextual pressure: Which individuals make this choice?

WAGENINGEN
UNIVERSITY & RESEARCH

100years
1918 — 2018

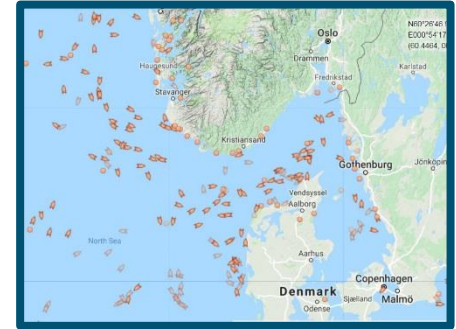# How does this actually affect the sea?

13:00 Thursday June 13 2019

11:00 Sunday June 16 2019

But our neighbours don't do the same

marinetraffic.org

Potentials for ecosystem modelling

Random Utility Models:

- Add more social factors to explain choices in the fleet

Fishers with vessel code UK (Urk) less likely to extend trip length when fishing conditions are favourable

Agent Based Modelling:

- Program agents with the characteristics and/or social values that we have observed

We can expect a fisher from Urk to resist switch to continuous fishing for longer than others due to social context

Insights for management

Management strategies:

Effort management (limiting fishing days) may be seen as more legitimate in religious communities (who already have their own socially-controlled version)

Make the message meaningful:

- *"The world and the Earth and the universe are neither steered nor made by people. People can only manipulate it somewhat, perhaps. But there is one being that ensures everything, and that made all the processes that exist, all the elements. And we call that being God the Father."*

Book: Love of God's Creation (*Liefde voor de Schepping*) brings forward a case for religious environmentalism

Limitations and challenges

- Parameterization
- Ethics
- Data availability
- Respondent bias
- Time

Take-home message:

- Profit and regulations matter, but they aren't everything

- Social factors matter, but they also aren't everything

- Mixed method research is necessary to balance influences to answer complex questions in times of change

With thanks to:

The fishermen who participated in this study

Niels Hintzen

    - Wageningen Marine Research

Joeri Scholtens & Javier Garcia-Bernardo

    - University of Amsterdam

Questions or thoughts to:

amanda.schadeberg@wur.nl

@AmandaSchaScha