

# Current enrichment materials fail to address the cognitive potential of pigs

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# Prelude



- Design integral sustainable pig husbandry system (project Pork Opportunities)
  - Integrated economical, ecological and social sustainability
  - ➔ Unifying the needs of the
    - ➔ Pig farmer
    - ➔ Pig
    - ➔ Environment
    - ➔ Citizen-consumer

# Prelude: What does the pig want?

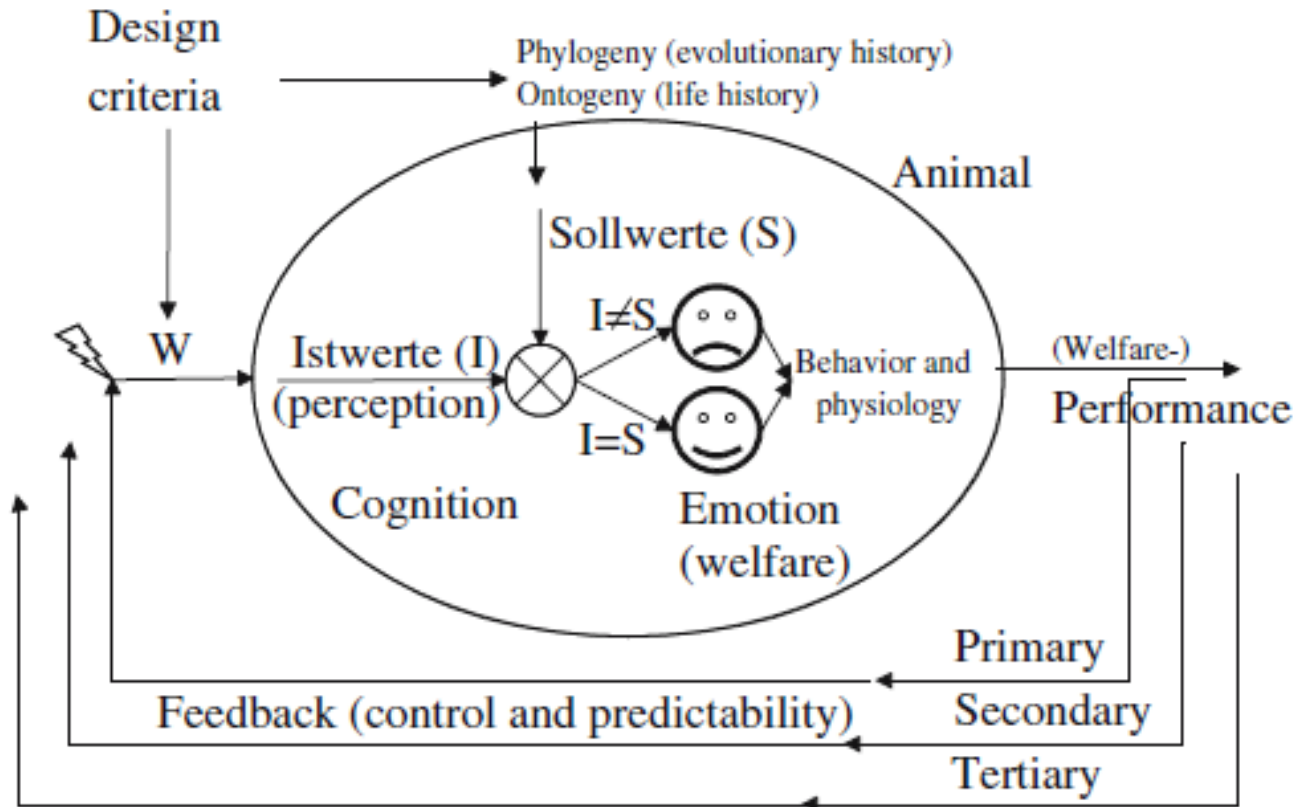
- 13 needs
- 100+ demands on the system, of which:
  - Environment stimulates exploration, foraging, playing behaviour
  - Offer a diverse and variable environment
  - Environment provides cognitive challenge
  - Etc.
- Conclusion Pork Opportunities
  - Let the pig fulfil its own needs and profit from that
  - ➔ Animal cognition provides opportunities

# Introduction

- Pigs evolved in complex environments
  - Behavioural repertoire & cognitive abilities
  - Domestication
- Housing offers stimulus-poor environments
  - Abnormal behaviour & stereotypes
- Legislation (EC Directive 2003/60/EEC)
  - “pigs must have permanent access to a sufficient quantity of material to enable manipulation activities”



# Conceptual framework animal welfare



Bracke et al., 2006

# Introduction: cognition

- Cognition includes perception, learning, memory and decision making
  - Classical conditioning
    - Relation between stimuli
  - Operant conditioning
    - Association between behaviour and consequence
    - Positive/negative reinforcer



# Current enrichment materials

Metal chain

Metal chain with ball

Metal chain with wooden beam

Handful straw

Additional feeder with clapper mechanism



# Results expert opinion

	Welfare score	Classical	Operant
Metal chain	1.4	-	-
Metal chain with ball	1.0	-	- (-)
Metal chain with wooden beam	3.0	-	- (+)
Additional feeder with clapper mechanism	2.0	-	- (+)
Handful straw	6.0	+	- (+)
Natural environment	10.0	+++++	+++++

Bracke et al., 2006



# Discussion literature

- Contrafreeloading
- Trick automated feeding device
- Knowing how mirror works
- Domesticated pig is able to survive in the wild
- Cunning in avoiding being killed by hunters

# Conclusions

- Cognitive challenge is relevant for animal welfare
- Difference between cognitive potential pig and current enrichment materials
- Design of cognitive enrichment deserves attention from science

# Ethical considerations

- Design of cognitive enrichment materials
  - Recreating natural conditions or
  - More artificial ways
- Cognitive challenge has moral consequences?
  - Gaming interface



# The end, thank you for your attention

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