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New Trends in Animal Welfare

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ANIMAL WELFARE

- *What is it to them?*
  - What is meant be welfare, wellbeing, sentience, stress, suffering?

- *What is it to us?*
  - Ethics of animal welfare

- *What should we do about it?*
  - Awareness, education, promotion

What is animal welfare?
-questions posed by 'welfare scientists'

- Is the animal living a normal life?
- Is the animal fit and healthy?
- How does it feel?

The alternative and insufficient questions posed by 'welfare scientists'

- Is the animal living a normal life?
  - Ethology, sociobiology
- Is the animal fit and healthy?
  - Veterinary science
- How does it feel?
  - Psychology, motivation analysis

So what then is animal welfare?

- It is the physical and mental state of a sentient animal as it seeks to cope with environmental challenge
- It thus covers the full spectrum
 - satisfaction to suffering

"Well-being"

'Fit and happy'
          [wherever they may be]
•sustained physical and mental health
     •absence of disease
     • absence of suffering (e.g.pain, fear, exhaustion)
•feeling good ('happy')
     •comfort, companionship, security

What is animal sentience?

- **'Feelings that matter'**
  - Perception of environmental stimuli
  - Interpretation: emotion & cognition
  - Motivation:
    - a measure of how much it matters
  - Measured response
  - Assess effectiveness of outcome
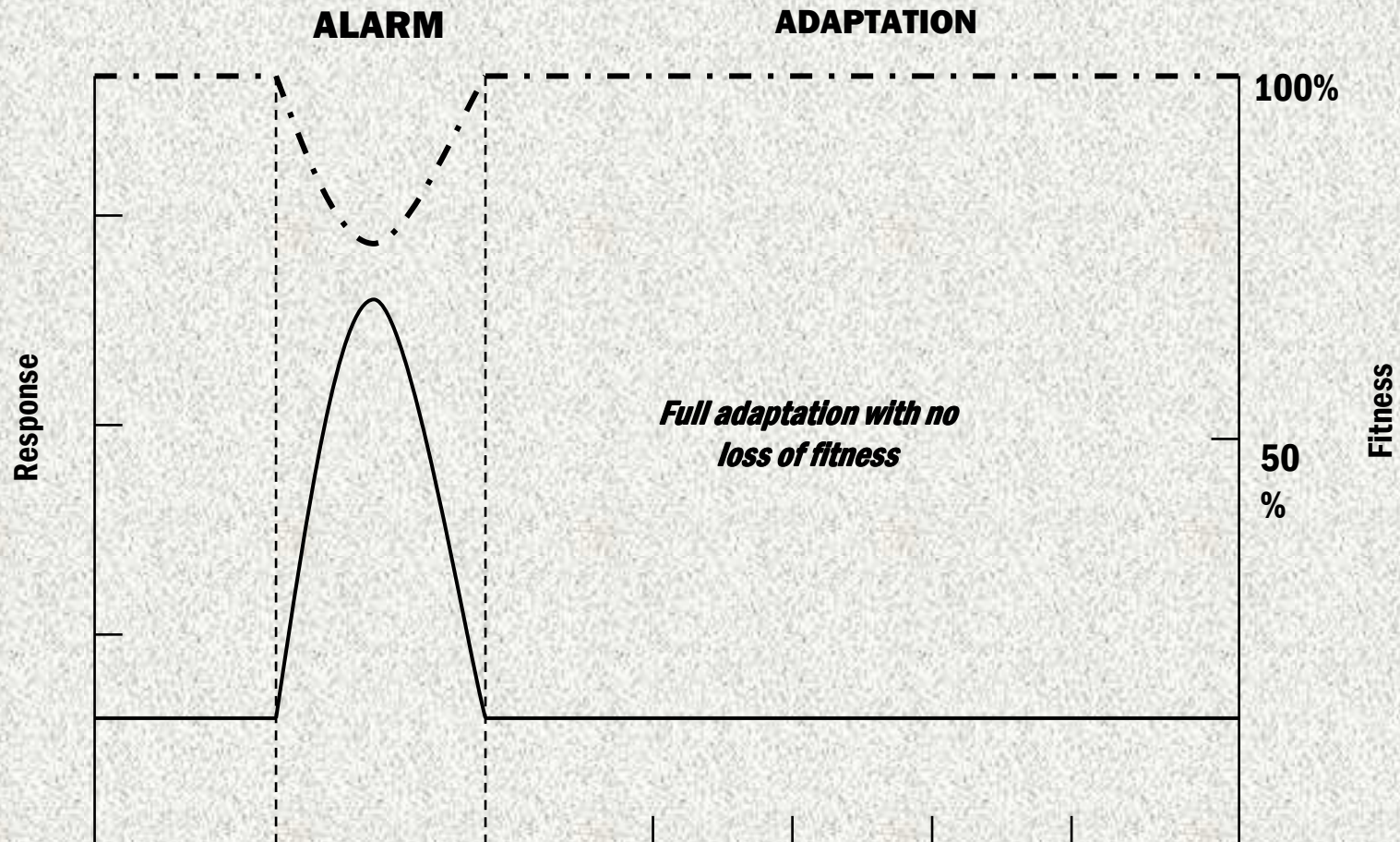 - Modify mood and understanding in light of experience

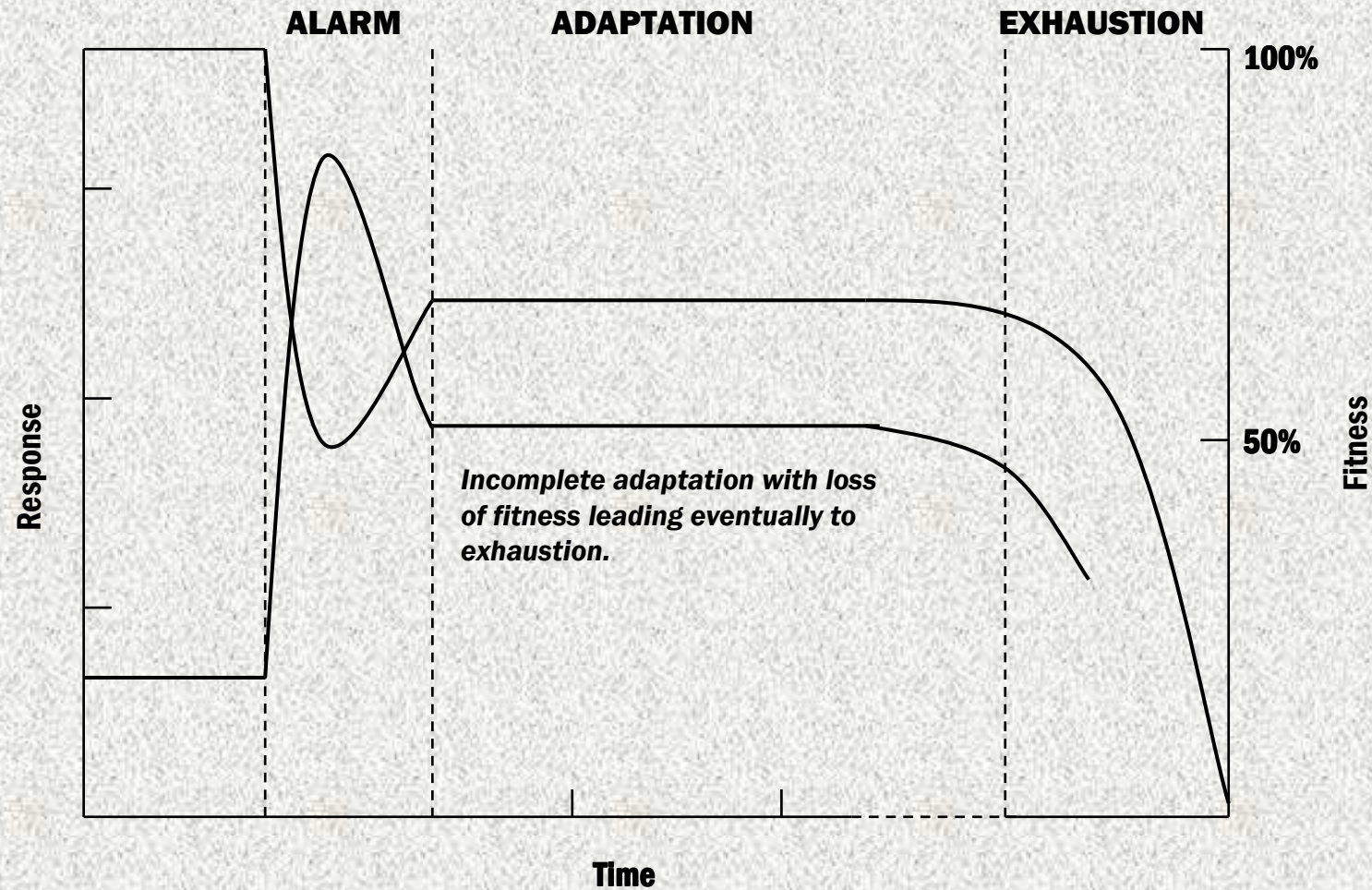A Sentient View of the World
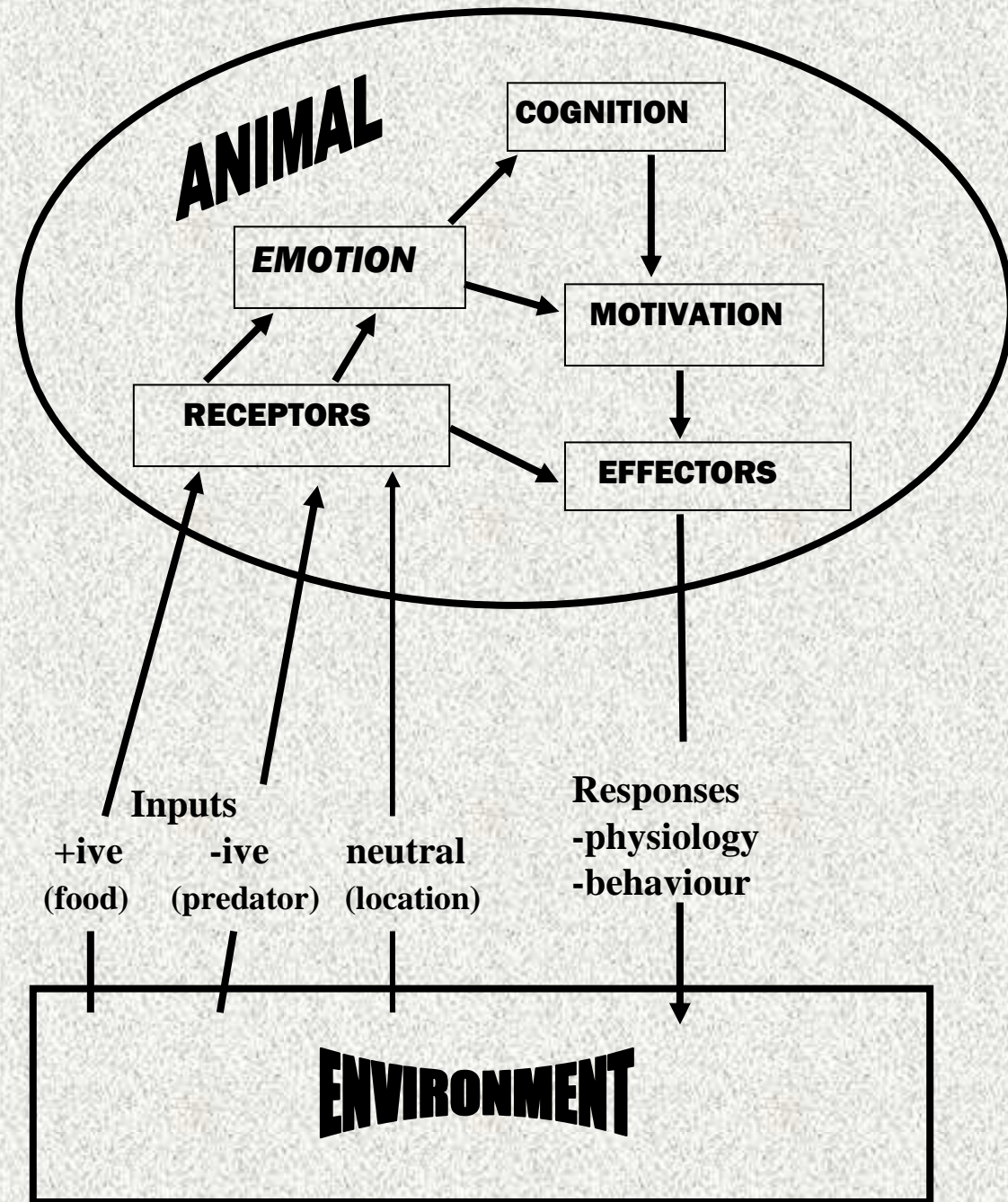
Animal Sentience

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Stress 1: alarm then full adaptation

Stress 2:
alarm and incomplete adaptation

ALARM **ADAPTATION** **EXHAUSTION**

100%

Incomplete adaptation with loss of fitness leading eventually to exhaustion.

50%

Response

Fitness

Time

Stress and suffering

- Suffering occurs when an animal cannot cope (or has difficulty in coping) with unpleasant feelings:
  - because the sensations are too intense, too complex or too prolonged
  - because it is unable to respond in a way that will effectively improve how it feels

Suffering: failure to cope

- Exhaustion
- Injury and chronic pain
- Malaise -feeling ill
- Chronic anxiety/apathy

Fear & Anxiety
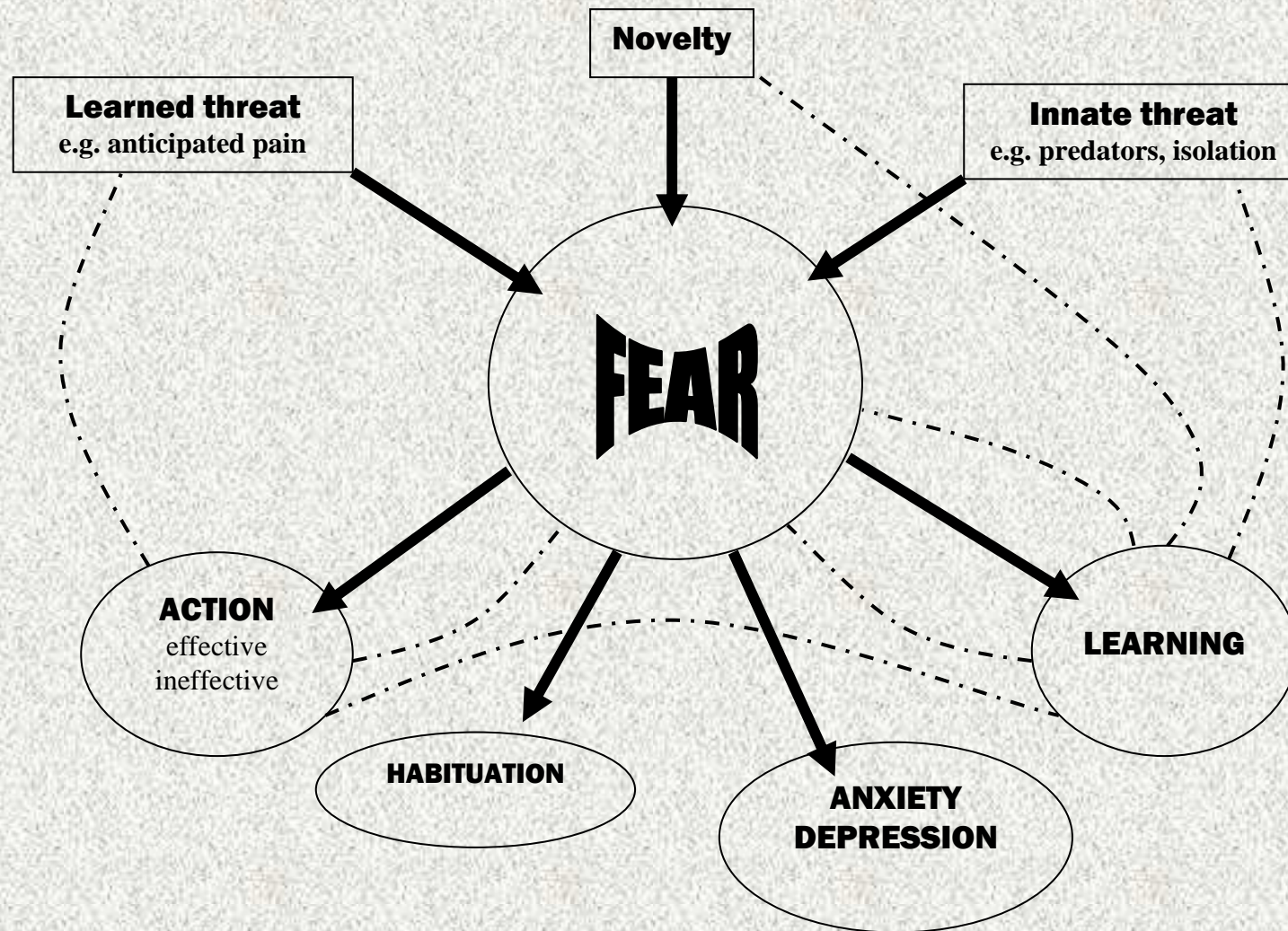
Pain
'How do we know it matters?'

- Immediate reaction
  - alarm, escape- *No*
- Modified behaviour
  - rest and locomotor changes- *maybe not*
  - aversion/learned avoidance - *possibly*
  - reduced positive behaviour (e.g. grooming) - *probably*
- Altered Mood
  - apathy, reduced appetite - *probably*
- Response to analgesics
  - externally administered - *not necessarily*
  - self selected - *Yes*

Animal Sentience
Why does it matter to us?

- Suffering and pleasure are defined by the capacity to feel, not the capacity to think
  - chimpanzee = horse = rat
- Sentient animals learn by experience as they attempt to cope with life. If they fail, they suffer
  - suffering is a learnt experience

Relief of suffering

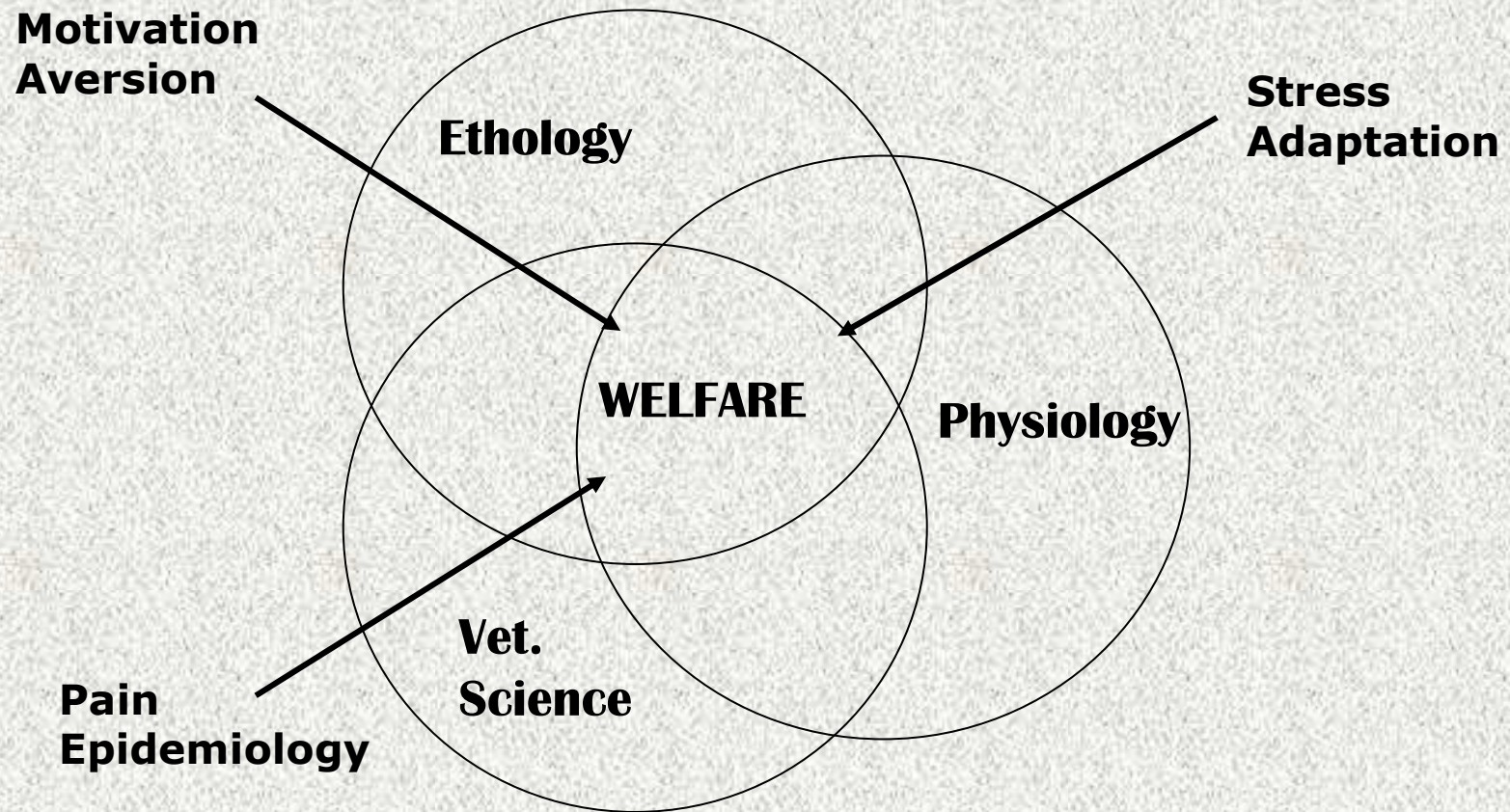| Symptom	Medical	Nursing
Fever	Antipyretics	Thermal comfort
Pain	Analgesics NSAIDs	Physical comfort Rest
Inappetence	Tonics	'Treats'
Fluid loss	i/v Rehydration	Oral rehydration
Mental distress	Unnecessary?	Reduce social stress TLC

The Ethics of Animal Welfare

	Wellbeing	Autonomy	Justice
Human society	Wholesome, cheap food	Freedom of choice	Welfare legislation
Producers	A fair living	Free competition	Good husbandry
Farm animals	Wellbeing at all times	Environmental enrichment	*"A life worth living"*
Living environment	Conservation Sustainability	Biodiversity	Respect for envt. & stewards

Right action: *What should we do?*

- Awareness
- Animal welfare science and education
- Animal welfare assessment in practice
- Welfare-based quality assurance
- The role of the veterinarian

What is welfare science?

Motivation
Aversion

Stress
Adaptation

Ethology

WELFARE

Physiology

Pain
Epidemiology

Vet.
Science

A Curriculum for Animal Welfare

- Principles of husbandry and welfare
- Animal welfare science
- Animal welfare Law and Regulations
- Animal welfare in clinical practice

Principles of husbandry and welfare

- Definitions of welfare, sentience and suffering
- The "Five Freedoms"
- Good husbandry: management of farm and companion animals
- Ethics of animal welfare

Animal Welfare Science (y2)

- Sentience and suffering
- Physiology of pain, stress and adaptation
- Ethology
  - normal behaviour in relation to environment
- Psychology
  - perception, emotion, cognition and motivation
- Abnormal behaviour
  - causes and management of anxiety, stereotypies etc.
- The human-animal bond.

Animal Welfare in Clinical Practice

- Practical assessment of husbandry and welfare
  - animal-based welfare monitoring
- Recognition of animal abuse
  - unnecessary suffering
- Herd health and welfare
  - on-farm strategic planning
  - welfare-based quality assurance

- so Welfare Science is part of Veterinary Science and vice versa.

- thus an understanding of animal welfare state (as perceived by the animal) is an essential prerequisite for proper professional veterinary care.

Why do vets. need Welfare Science?

- because animals need vets. who understand not only what keeps them healthy but also how they feel as they seek to meet their physiological and behavioural needs.

What are?

- Animal welfare and wellbeing
- Sentience, stress and suffering
- Animal welfare science and education
- Animal welfare assessment in practice
- Welfare-based quality assurance
- The role of the veterinarian

Welfare assessment and assurance

- *How is it for the dairy cow?*

Freedoms and Provisions

- ***Freedom from hunger and thirst:***
- access to fresh water and a diet to maintain full health and vigour
- ***Freedom from discomfort:***
- a suitable environment: .e.g. shelter and a comfortable resting place
- ***Freedom from pain, injury and disease:***
- prevention and/or rapid diagnosis and treatment
- ***Freedom from fear and stress:***
- ensure conditions which avoid mental suffering
- ***Freedom to express normal behaviour:***
- ensure sufficient space, proper facilities and social contact

Possible welfare problems for the Dairy Cow

- Hunger, malnutrition or metabolic disease
  - improper feeding for phenotype
- Chronic discomfort
  - cubicle design, loss of condition
- Pain from mastitis or lameness
- Increased susceptibility to infection
- Anxiety/insecurity
- Metabolic or physical exhaustion

Heritabilities, genetic (below) and phenotypic correlations

Trait	1	2	3	4
Yield (kg)	**0.33**	0.20	-0.01	0.04
C.Interval (d)	0.39	**0.025**	0.04	0.04
Mastitis	0.26	0.11	**0.057**	0.05
Lameness	0.17	0.20	0.33	**0.036**
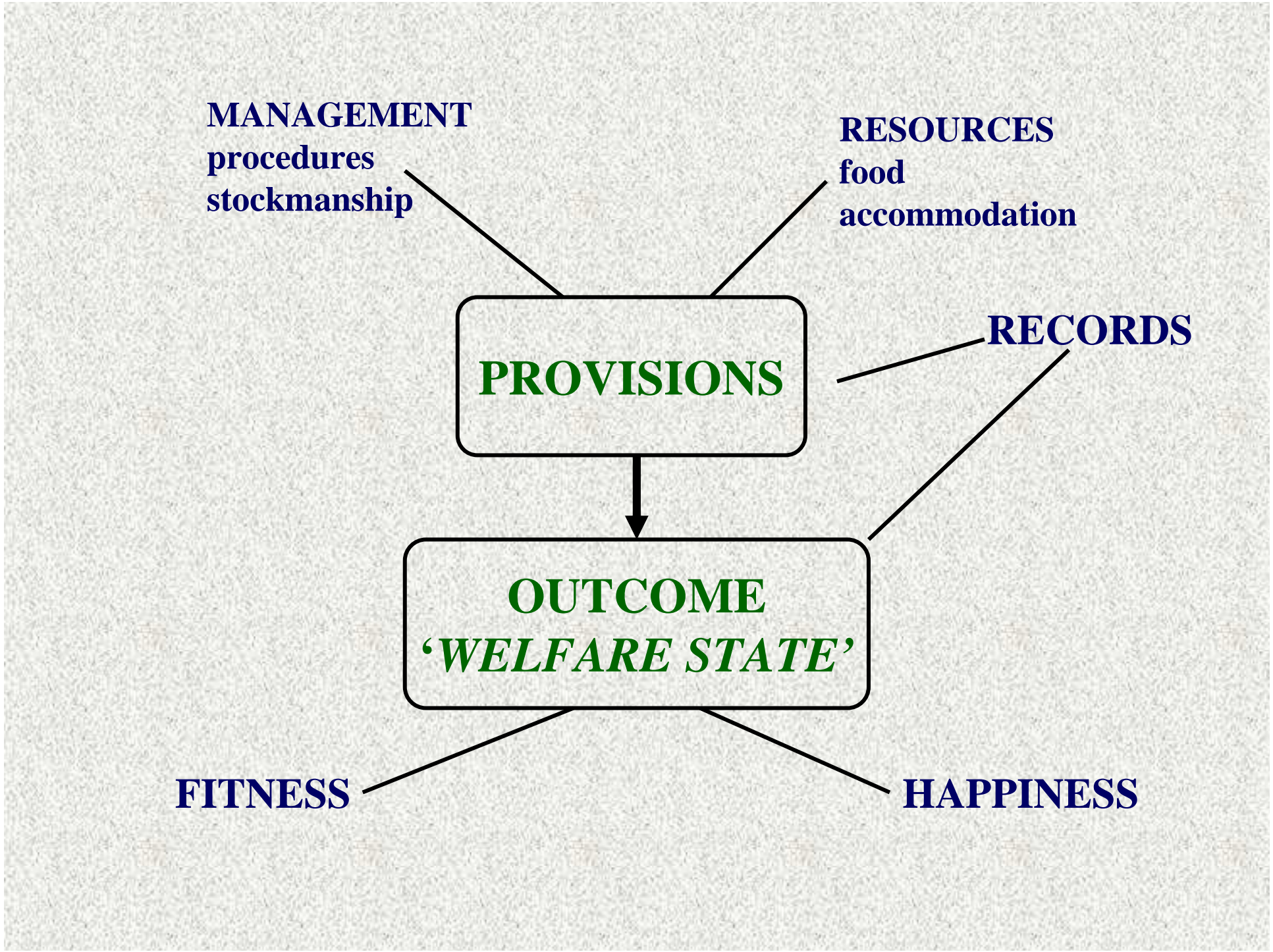
Animal-based indices of welfare
observations & records

- **Fitness**
  - Nutrition: body condition, growth, fertility
  - Environment: skin & coat condition, injuries
  - Health records, prevalence of (e.g.) lameness
- **Feelings**
  - Chronic discomfort
  - Pain from (e.g.) lameness, injury
  - Fear & stress from (e.g.) disturbed behaviour

Results Profile of 53 Dairy Farms

Measure	Source of Information	Unit of Measure	Score Categories (20% in each banding)									

Dr H Whay
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Est. - Estimated by farmer, **Obs**.-Observed during visit, **Rec**.-Farm records

Measure	Source	Unit	A		B		C		D		E	
Health & Production												
Nutrition												
Annual Ave. milk yield	Est.	Litres	10500	8300	8200	7789	7652	7118	7000	6500	6313	4275
Thin cows (BCS <2)	Obs.	%	0	5.6	6.3	11.1	13.3	21.4	21.7	31.3	33.3	61.1
Fat cows (BCS >3.5)	Obs.	%	0	0	0	0	0	0	1.4	5	5.1	27.6
Bloated rumen[1]	Obs.	%	0	0	2.6	6.5	6.7	16.7	17.5	24.1	25	46.7
Hollow rumen[1]	Obs.	%	0	6.3	7.4	13.8	14.3	20	20.8	31.3	32.1	82.4
Milk fever cases	Est.	/100 cows/year	0	0	0	0	0	0	1.1	1.1	1.3	30.6
Other disease[2]	Est.	/100 cows/year	0	2.7	3.0	4.4	4.7	6.9	7.3	9.5	10.3	19.1
Reproduction												
Conception rate to 1st Service	Est.	%	80	68	66	60	59	56	55	49	47	28
Assisted calving cases	Est.	/100 cows/year	0	0	0	0	0.9	1.1	1.1	4.8	4.9	40
Mastitis												
Mastitis cases	Rec.	/100 cows/year	0	9	11.5	20.7	21.3	34.5	40.8	46.2	46.8	120
Mastitis cases	Est.	/100 cows/year	2.8	13.3	14.8	18.9	20	32.7	33.0	46.7	46.8	89.1
Lameness												
No. of lame cows	Obs.	%	0	13.6	13.8	18	19.5	23.5	23.6	29.6	29.8	50
Lameness cases	Rec.	/100 cows/year	0	0	0	0	2.2	4.1	4.3	11.0	11.5	42.3
Lameness cases	Est.	/100 cows/year	3.2	8.7	9.2	14.7	14.9	20.7	21.3	34.8	34.9	54.4
Claw overgrowth[3]	Obs.	%	0	11.8	12.5	25	26.7	34.4	35	46.2	46.4	76.5
Poor claw conformation[4]	Obs.	%	0	0	0	0	3.3	7.1	7.4	16.7	17.9	37.5
Non-specific Illness / Mortality												
Dull / Obviously sick	Obs.	%	0	0	0	0	2.2	3.3	3.6	6.3	6.7	20
Sudden death / casualty	Est.	/100 cows/year	0	1.0	1.1	1.7	1.8	2.8	3.1	4.1	4.3	15.6

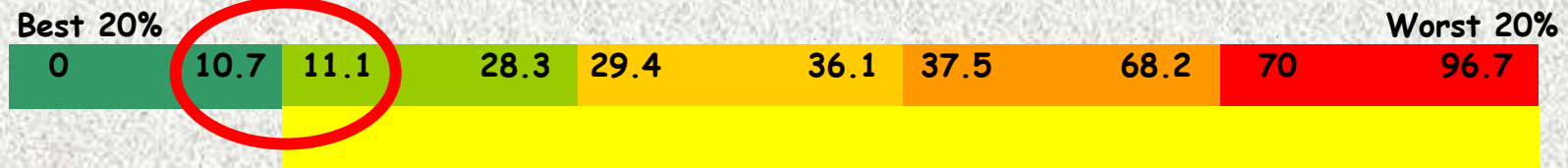# Example : % requiring action - intervention level

Thin cows (% with BCS<2)

Best 20%   Worst 20%

| 0 | 5.6 | 6.3 | 11.1 | 13.3 | 21.4 | 21.7 | 31.3 | 33.3 | 61.1 |

Mastitis cases

Best 20%   Worst 20%

| 2.8 | 13.3 | 14.8 | 18.9 | 20 | 32.7 | 33.0 | 46.7 | 46.8 | 89.1 |

Lame cows (%)

Best 20%   Worst 20%

| 0 | 14 | 14 | 18 | 20 | 23.5 | 24 | 29.6 | 29.8 | 50 |

Swollen hock (%)

Best 20%   Worst 20%

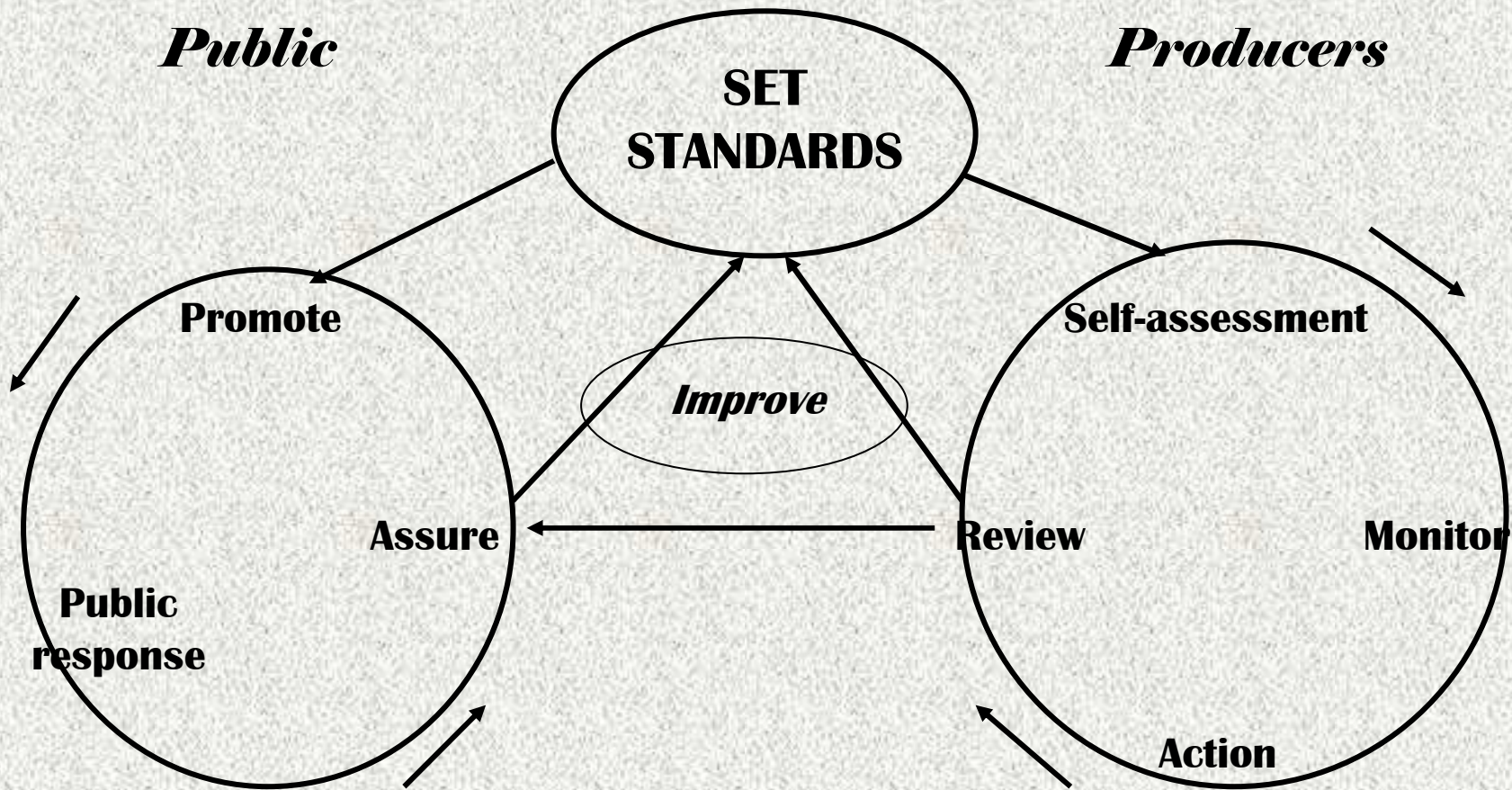| 0 | 10.7 | 11.1 | 28.3 | 29.4 | 36.1 | 37.5 | 68.2 | 70 | 96.7 |
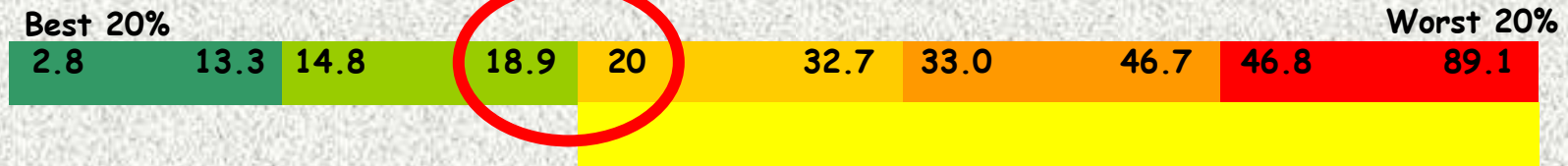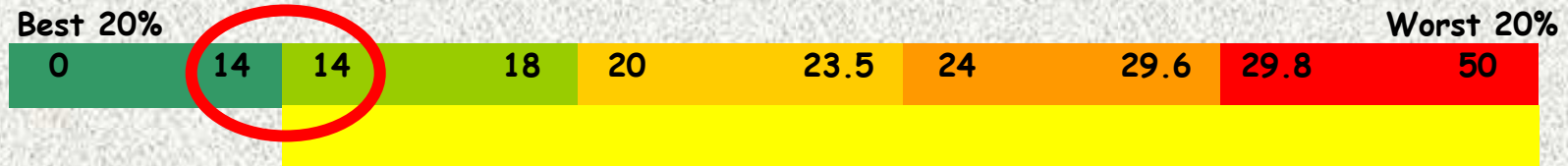
Failures of Provision

- Inadequate nutrition for phenotype
  - infertility, metabolic disorders
- Inadequate environment for phenotype
  - mastitis, lameness
- Phenotype 'unfit for purpose'
  - premature culling

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Welfare-based Quality Assurance
"The Virtuous Bicycle"

Public

Producers

SET STANDARDS

Promote

Self-assessment

Improve

Assure

Review

Monitor

Public response

Action

The 'Good Shepherd' Brand

- Guarantees
  - responsible land use
  - biosecurity
  - animal welfare
- Does *not* claim
  - tastier food
  - healthier food

"Our Constant Endeavour"
The Duty of the Profession

- Professional ability
  - to assess welfare and recognise suffering in a sentient animal or population of animals
  - to identify and remedy failures of provision

- Humanity
  - to respect the needs of animals and their owners

- Courage
  - to act according to that which is right, not simply that which is regulated