

Personality Type?

...in Animal Science?



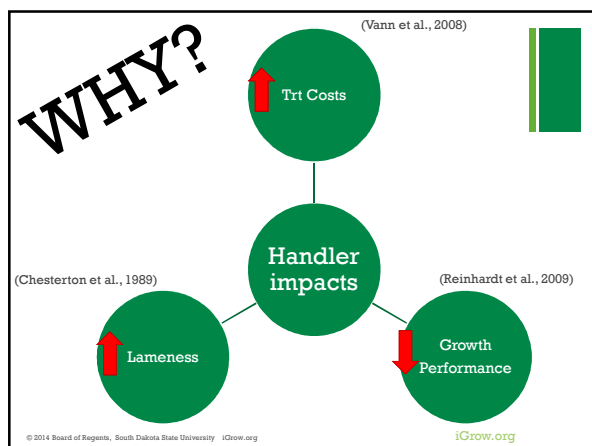


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Are animals or people easier to understand?

Who determines the level of well-being animals receive?

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(Vann et al., 2008)

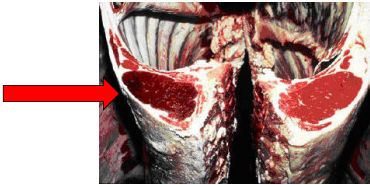
WHY?

Consumer Expectations

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Carcass quality:

■ **Dark-cutters & bruising** (Tarrant, 1989; Lindsay, 1981; Grandin, 1981)



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■ **Stockman injuries:**

■ High incidence rate of nonfatal injuries (U.S. BLS, 2012)

■ Human error (Dogan and Demirci, 2012)

■ **Stockman expertise:**

■ Innate ability & experience (Burton et al., 2012)

■ Loss of livestock know-how (Burton et al., 2012)



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Why personality type?

■ Consistent over time & culture

(Costa and McCrae, 1988; Tett et al., 1991)

■ Job selection (Tieger and Barron, 2007)

■ On the job injuries (Pierce, 2005)

■ Assessments v. performance (Benyon, 1991)

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Objective Measurements

■ Measurements of well-being

■ Vocalization (Grandin, 1998, 2001a; Watts and Stookey, 2000)

■ Slips/falls, banging into gates, pace above walk/trot
(Grandin, 2008, 2010, 2011)

■ Limit reviewer variation (Grandin, 2010)

■ Audits for slaughter plants (Grandin, 1998, 2001a, 2005);
transportation (Grandin, 1997); feedlots (Grandin, 2008, 2010, 2011)

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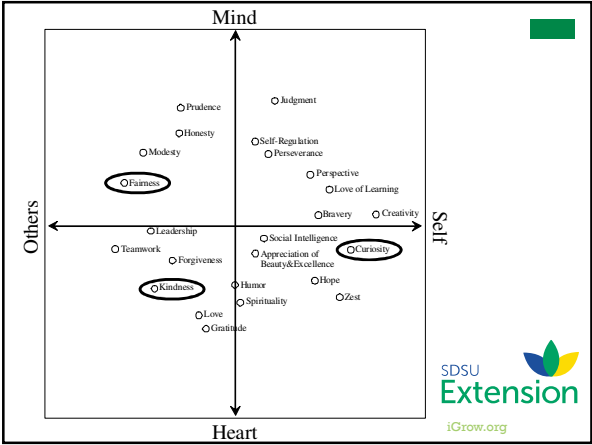
Objectives

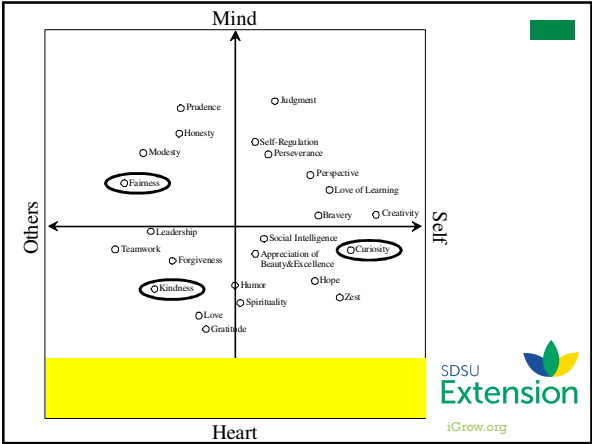
1) Develop a scoring method to quantify
cattle handling proficiency by observing
human-cattle interactions

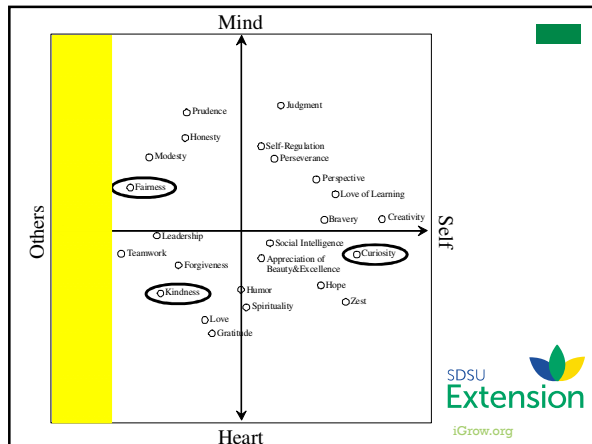
2) Determine the effect of personality type
on cattle handling proficiency

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MBTI			
Personality type		Handlers, n	Handler population, %
Intuition	Feeling (NF)	0	0
	Thinking (NT)	1	8
Sensing	Judgment (SJ)	7	58
	Perceiving (SP)	4	34

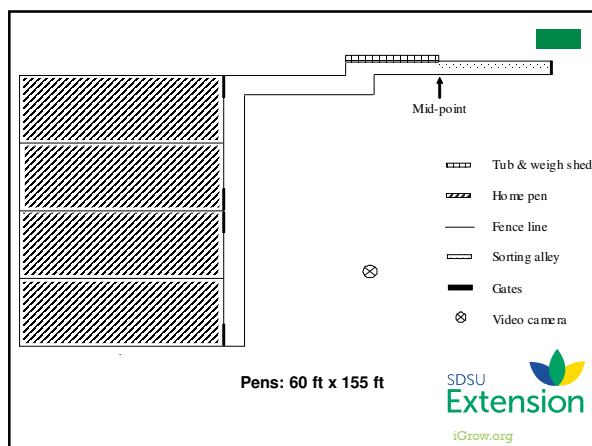






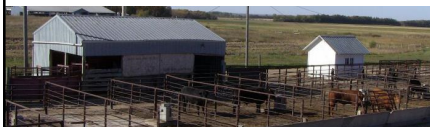
Exercises

- 1 - approach steer pressure zone
- 2 - manipulate steer pressure zone
- 3 - close human-cattle interaction



Experimental Procedures

- 12 handlers randomly assigned to 2 pens
- Blind to personality type
- Pens handled 8 times; maximum 2 times / day
- 4 Reviewers



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BEHAVIOR RESPONSE	DESIRABLE
Attention	Towards handler
Fence contact	No contact
Curiosity	Approach to investigate handler
Excitability	Calm/relaxed, easy to handle
Flight zone	Move away from handler at safe distance
Footing	Sure footed
Gregarious	Maintain manageable, relaxed herd
Movement	Maintain desired motion (or lack of motion) handler is working toward
Pace	Relaxed/quick walk

SUMMED 9 RESPONSE SCORES

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BEHAVIOR RESPONSE	UNDESIRABLE
Attention	Away from handler
Fence contact	Occasional to continuous contact
Curiosity	Ignore handler, maintain normal/previous behavior
Excitability	Nervous/stressed, difficult to handle
Flight zone	Stay as far away from handler as possible
Footing	Fall
Gregarious	Scattered, unmanageable herd
Movement	Continuously uncooperative motion
Pace	Nervous/stressed run

SUMMED 9 RESPONSE SCORES

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Statistical Analyses

- Scoring system: **CattleScore**
- Completely random design
 - **Fixed**=personality type & exercise
 - **Random**=reviewer, pen, & all interactions
- Proc CORR

CattleScore = Attention + Fence contact + Curiosity +
Excitability + Flight zone + Footing + Gregarious
+ Movement + Pace

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AdjCattleScore

CattleScore = Attention + Fence contact + Curiosity +
Excitability + **Flight zone** + Footing + **Gregarious** +
Movement + **Pace**

AdjCattleScore = Attention + Fence contact + Curiosity +
Excitability + Footing + Movement

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Interactions within AdjCattleScore

Item	MBTI preference	
	Introvert	Extravert
Handlers	8	4
AdjCattleScore	30 ± 0.3	28 ± 0.4
AdjCattleScore r ²	0.46	
Personality type r ²	0.06	
Effects, P-value		
Personality type (PT)	< 0.01	
Pen	< 0.01	
Reviewer	< 0.01	
Exercise	< 0.01	
PT x Reviewer	0.80	
PT x Exercise	0.23	
Reviewer x Exercise	0.69	
PT x Pen	0.17	
Pen x Reviewer	0.02	
Pen x Exercise	< 0.01	

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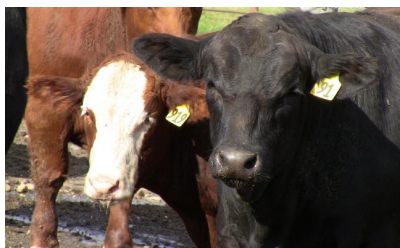
The ability of exercises to differentiate handlers

Item	r^2	MBTI preference		P-value
		I	E	
Handlers		8	4	
All exercises				
Total observations		192	96	
AdjCattleScore	0.49	31 \pm 0.2	29 \pm 0.3	< 0.01

The ability of exercises to differentiate handlers cont.

Item	r^2	MBTI preference		P-value
		I	E	
Handlers		8	4	
Exercise 1				
Total observations		64	32	
AdjCattleScore	0.18	33 \pm 0.3	32 \pm 0.5	0.32
Exercise 2				
Total observations		64	32	
AdjCattleScore	0.56	31 \pm 0.3	29 \pm 0.4	< 0.01
Exercise 3				
Total observations		64	32	
AdjCattleScore	0.42	29 \pm 0.5	26 \pm 0.7	< 0.01
Exercise 2 & 3				
Total observations		128	64	
AdjCattleScore	0.46	30 \pm 0.3	28 \pm 0.4	< 0.01

Does personality type effect cattle handling proficiency?



Statistical Analyses

■ Personality type: **AdjCattleScore**

- Reviewer scores averaged
- Randomized block design
 - Fixed – personality type
 - Random – pen
 - Error term – personality type x pen
- Experimental unit – handler

■ **TotalAdjCattleScore = Ex2 AdjCS + Ex3 AdjCS**

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Effects of handler MBTI personality types on the **summed** AdjCattleScore for **Exercises 2 and 3**

Item	Personality Type		r ²
	<u>Introvert</u>	<u>Extravert</u>	
I/E dichotomy			
Handlers	8	4	
TotalAdjCattleScore	60 ± 0.8	* 55 ± 1.1	0.47
T/F dichotomy	<u>Thinking</u>	<u>Feeling</u>	
Handlers	7	5	
TotalAdjCattleScore	59 ± 1.2	57 ± 1.4	0.38

* $P < 0.10$

LS Means are shown.

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Effects of handler MBTI personality types on the **summed** AdjCattleScore for **Exercises 2 and 3** cont.

Item	Personality Type			r ²
	<u>Judging</u>	<u>Perceiving</u>		
J/P dichotomy				
Handlers	8	4		
TotalAdjCattleScore	60 ± 0.9	56 ± 1.4		0.38
Temperament	<u>NT</u>	<u>SJ</u>	<u>SP</u>	
Handlers	1	7	4	
TotalAdjCattleScore	—	59 ± 0.8	* 56 ± 1.1	0.40

* $P < 0.20$

LS Means are shown.

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Summary

- Observed typical human-cattle interactions
- Pertinent cattle behaviors
- Evaluated exercises
- Effect of personality type
 - MBTI: Introverts tend to have higher ACS than Extraverts
 - VIA-IS: no differences



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Implications

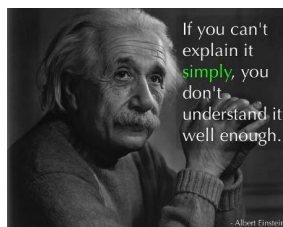
- Identified exercises that established differences in handler proficiency
- Repeatable across reviewers
- Personality type assessments:
 - MBTI (potential)
 - VIA-IS (limited potential)



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A few closing thoughts:

1. Language of people
2. Language of animals





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QUESTIONS?

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