Cognitive and Emotional Components in Human Dimensions

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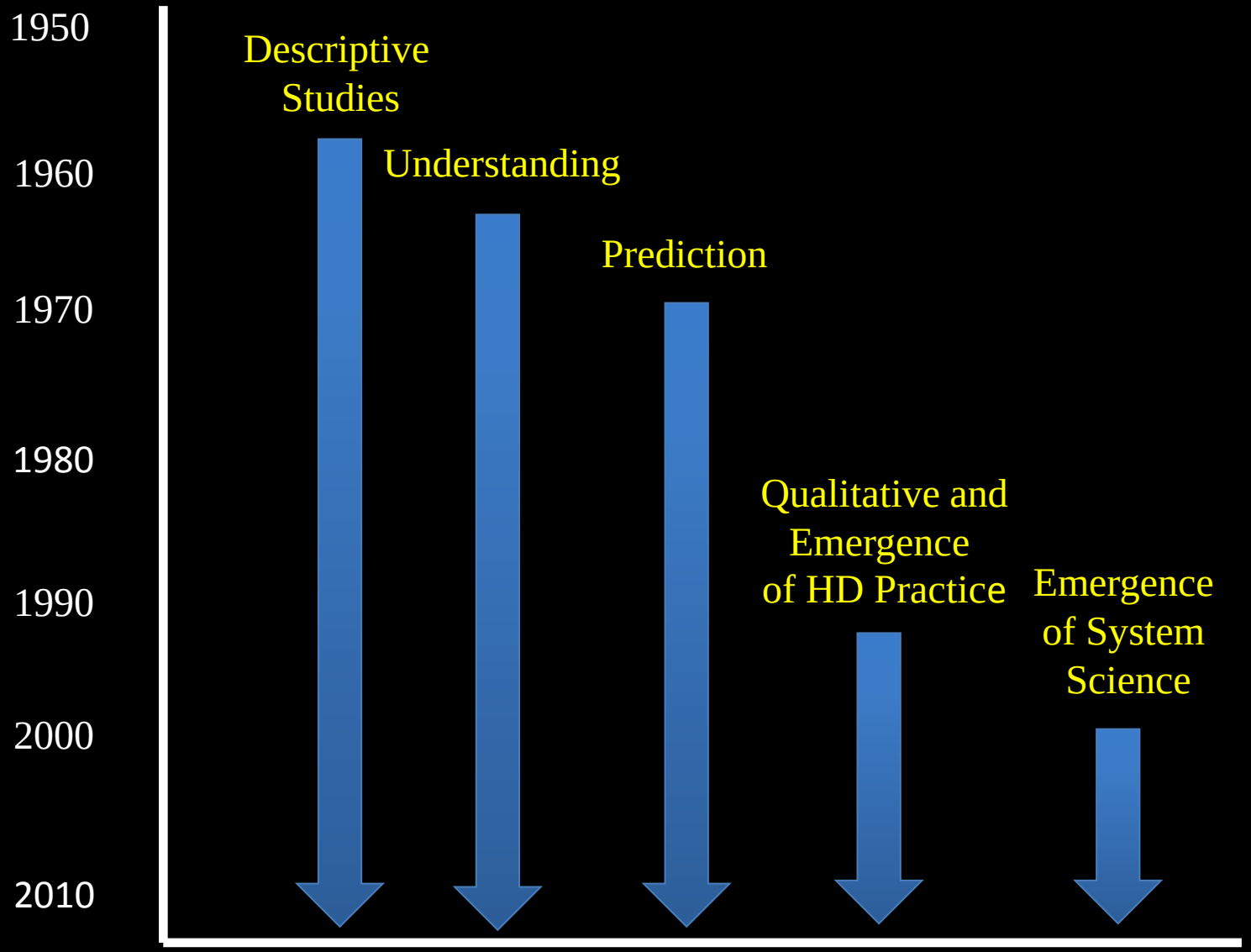
The Progression of HD Research



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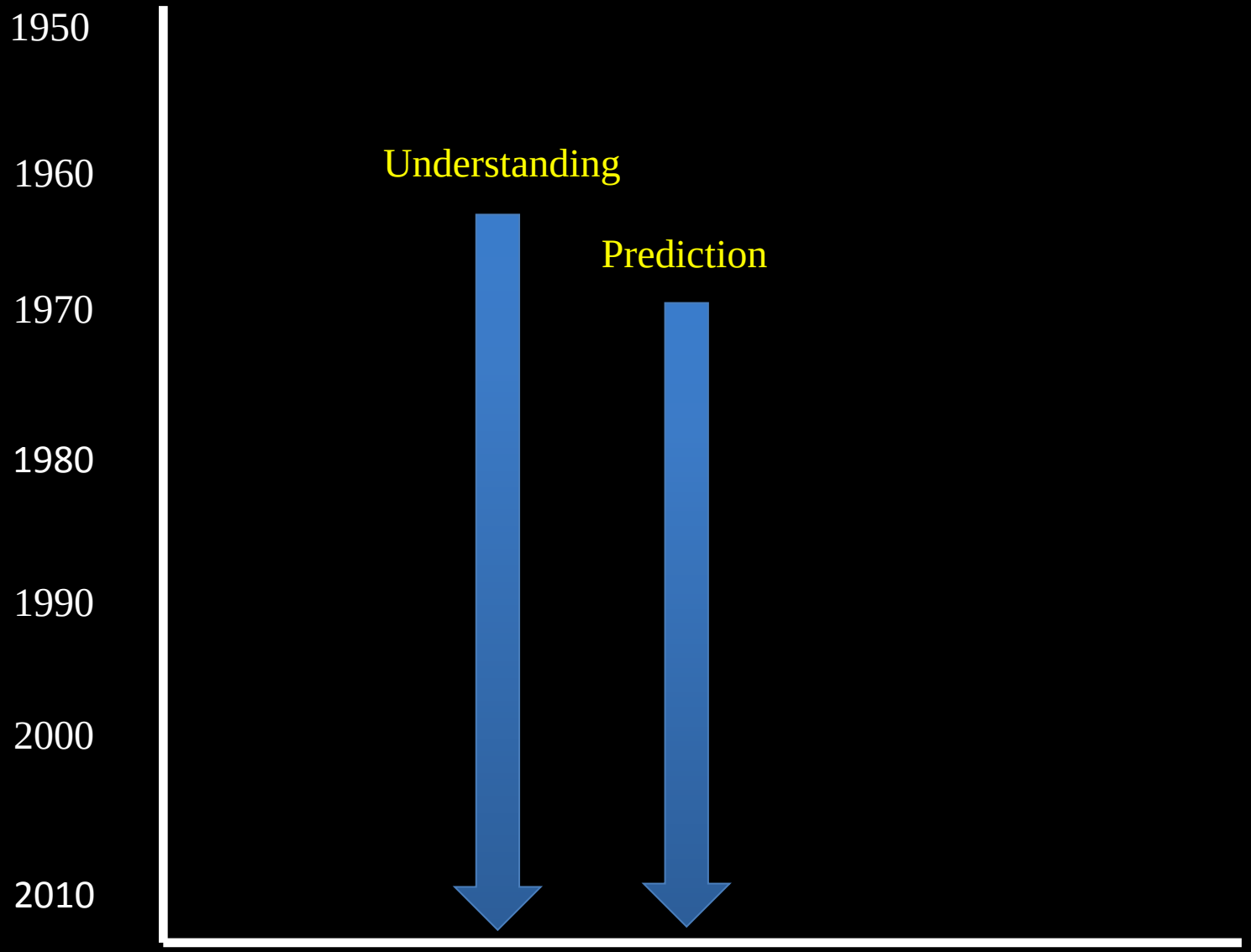
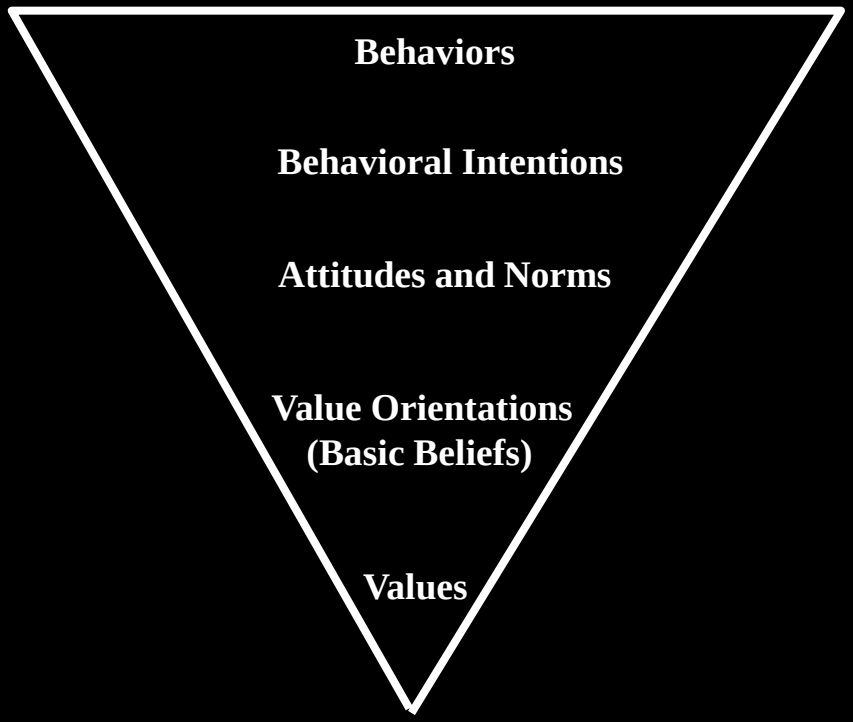


Overview

- Briefly overview HD research relative to:
  - Cognitions
  - Emotions
- Illustrate how the findings can facilitate:
  - Understanding
  - Prediction

  of human-wildlife interactions
- Suggest a model for integrating cognitions & emotions

Cognitive Hierarchy



Behaviors / Behavioral Intentions:

Individual – Limiting use

Agency – Taking actions to protect a specific species

Attitudes / Norms:

General – Wolves

Specific – Wolf reintroduction in Colorado next week

Value Orientations: Mostly general, but have a defined broader target (e.g., all wildlife as oppose to wolves)

Values: General in action, target, context and time

Goal – Challenge – Solution

- Goal of Human Dimensions / Recreation research

  Conceptualize, measure and interpret variables and their relationships in a way that bears meaning on problems of managerial or scientific interest

- Challenge

  Effectively communicating the meaning of abstract statistics (e.g., standard deviation, standard error) for measuring consensus

- Solution – Potential for Conflict Index (PCI_2)

  Manfredo, Vaske, & Teel, 2003

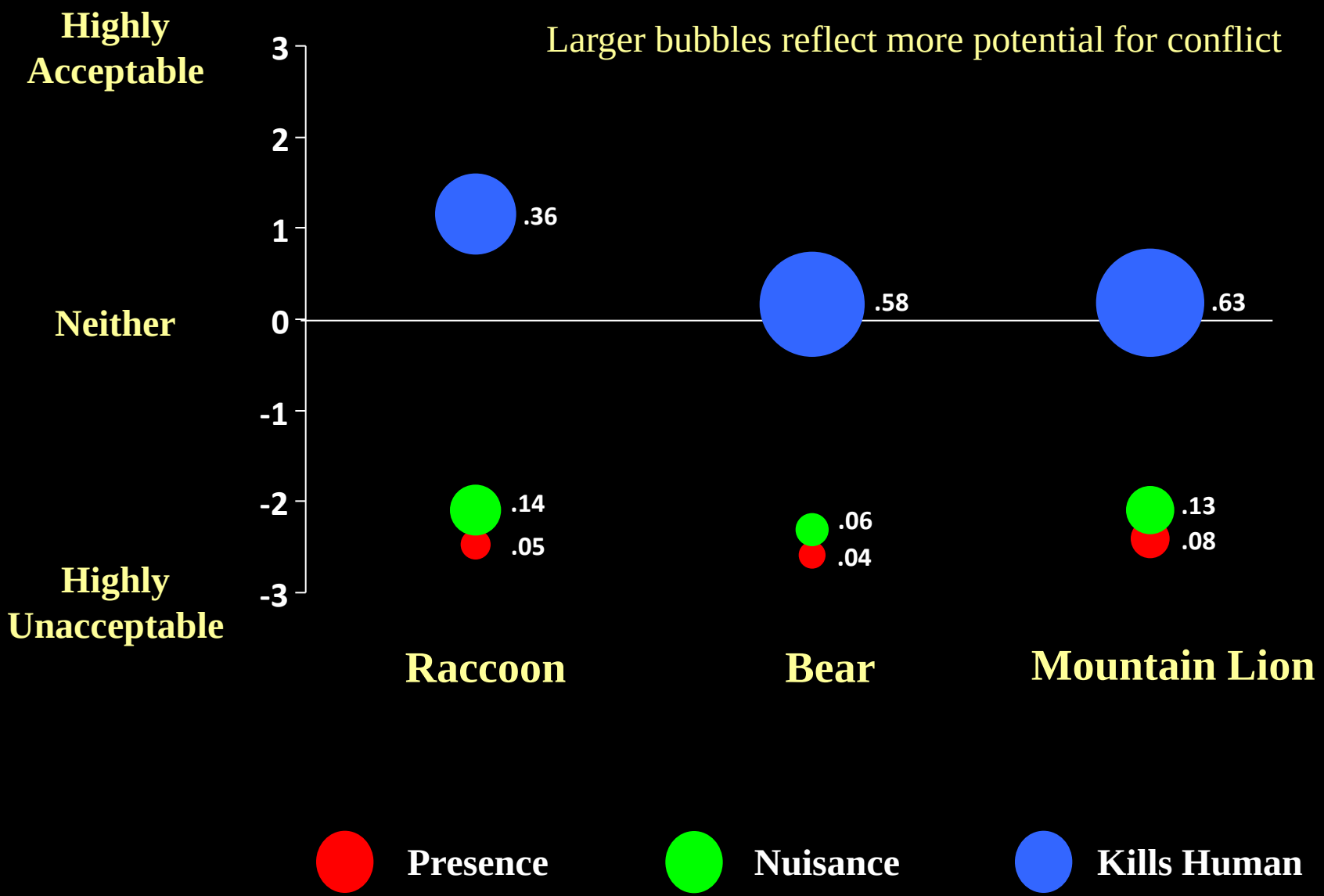
  Vaske et al., 2006; Vaske et al., 2010

Potential for Conflict Index (PCI_2)

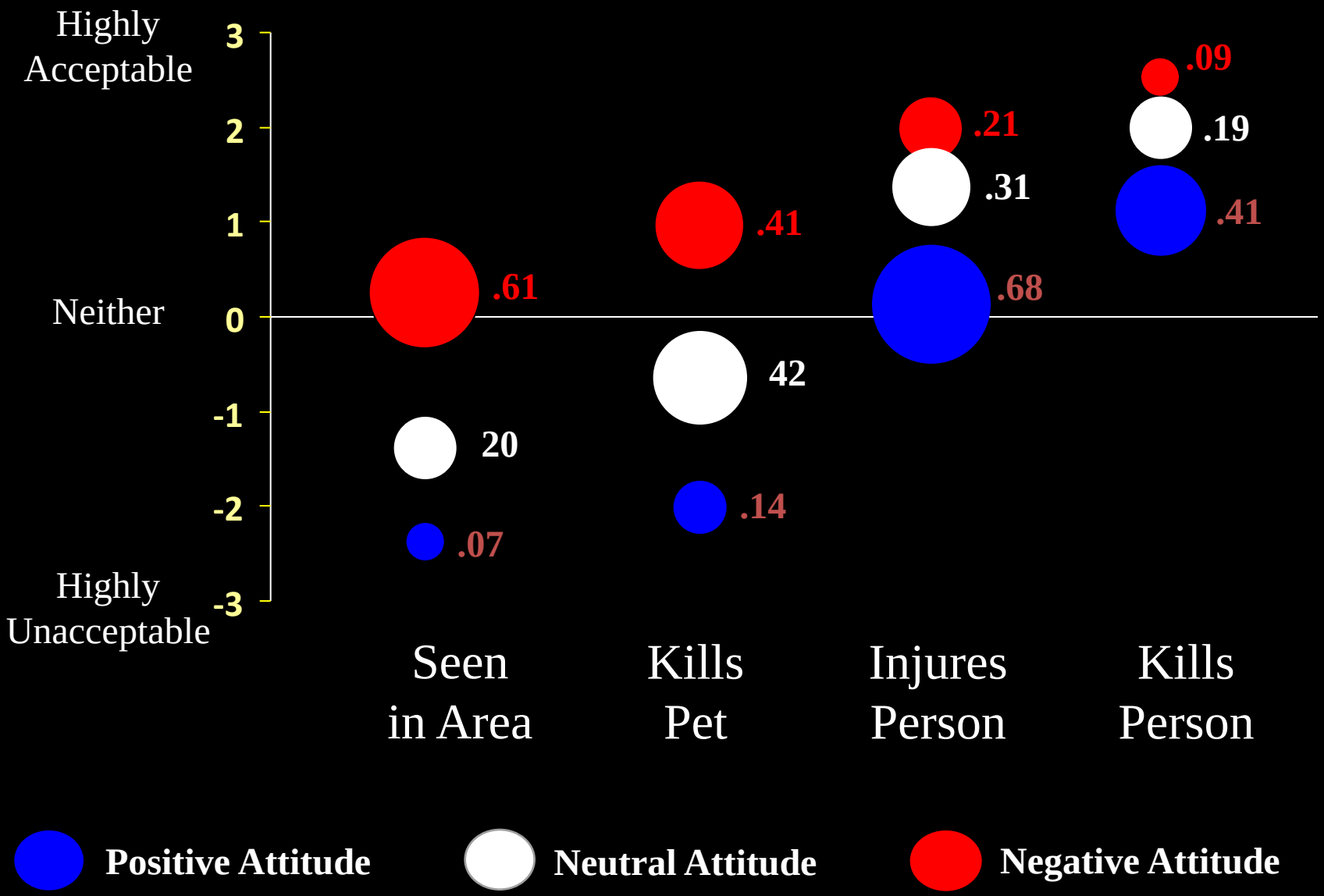
- Integrates into one measure information about:
  - Central tendency
  - Dispersion
  - Shape of a distribution
- Uses graphic display: Easy interpretation
- Places findings in managerial context
  (e.g., the acceptability of a given mgmt. action)

Understanding Cognitions using the Potential for Conflict Index PCI_2

Acceptability of Killing Animal



Acceptability of Killing a Lion by Attitude



Cognitions as Predictors

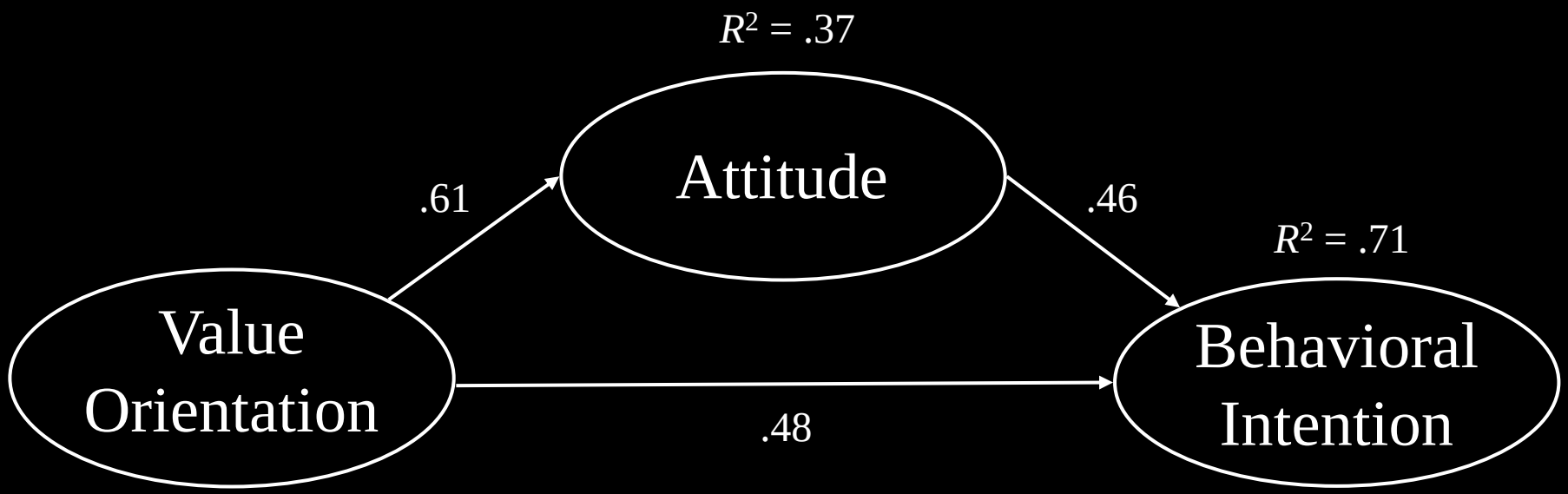
Public Knowledge of Desert Tortoise

Vaske and Donnelly (2007)

Concepts Examined

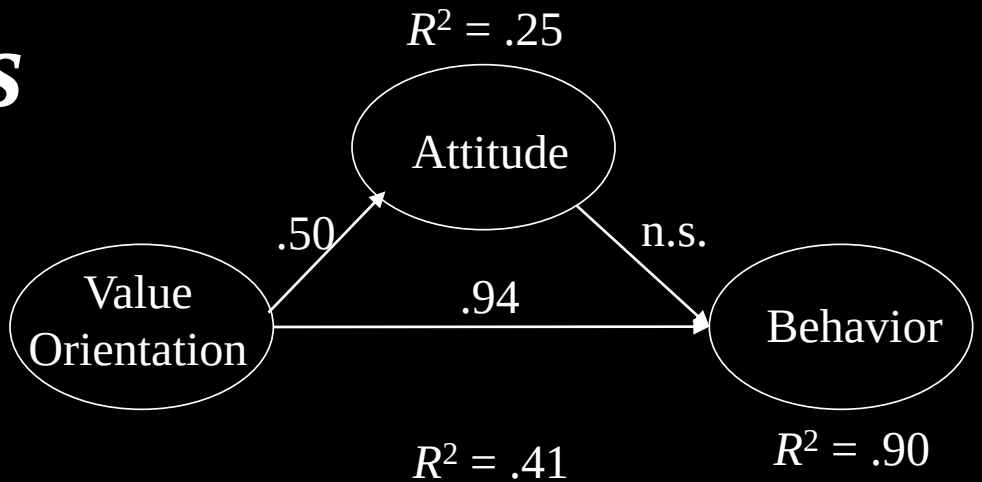
- Wildlife value orientations (wvo)
  - Mutualism basic beliefs
  - Domination basic beliefs
- Attitudes toward desert tortoises
- Willingness to limit desert-related activities (an individual's behavioral intentions)
- Knowledge about desert tortoises

Desert Tortoise Path Model

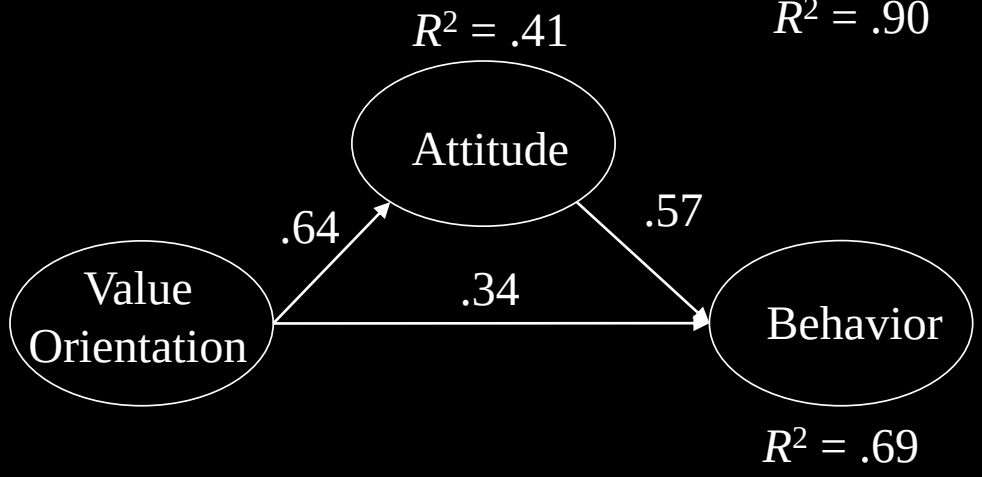


Three Separate Knowledge Models

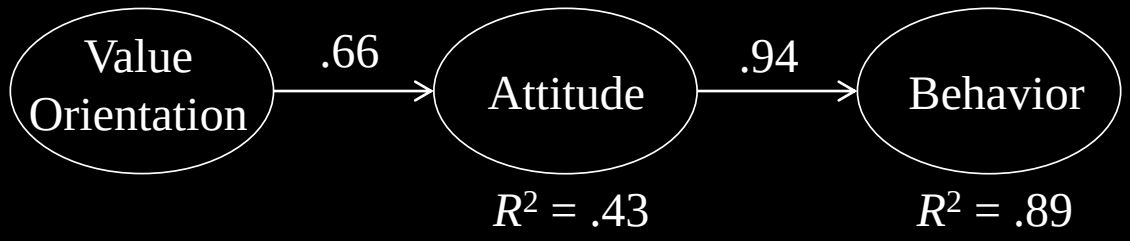
Low Knowledge



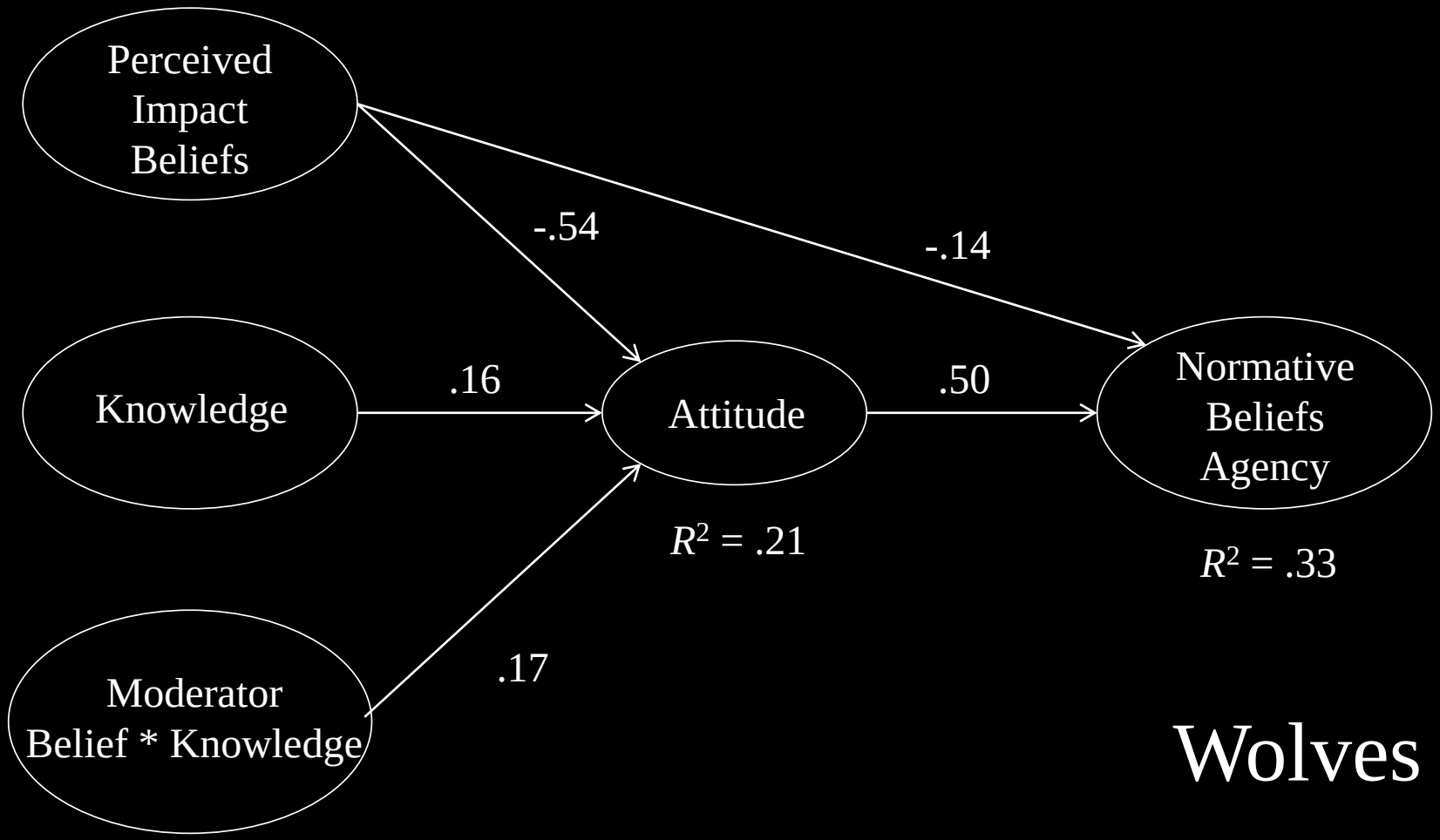
Medium Knowledge



High Knowledge

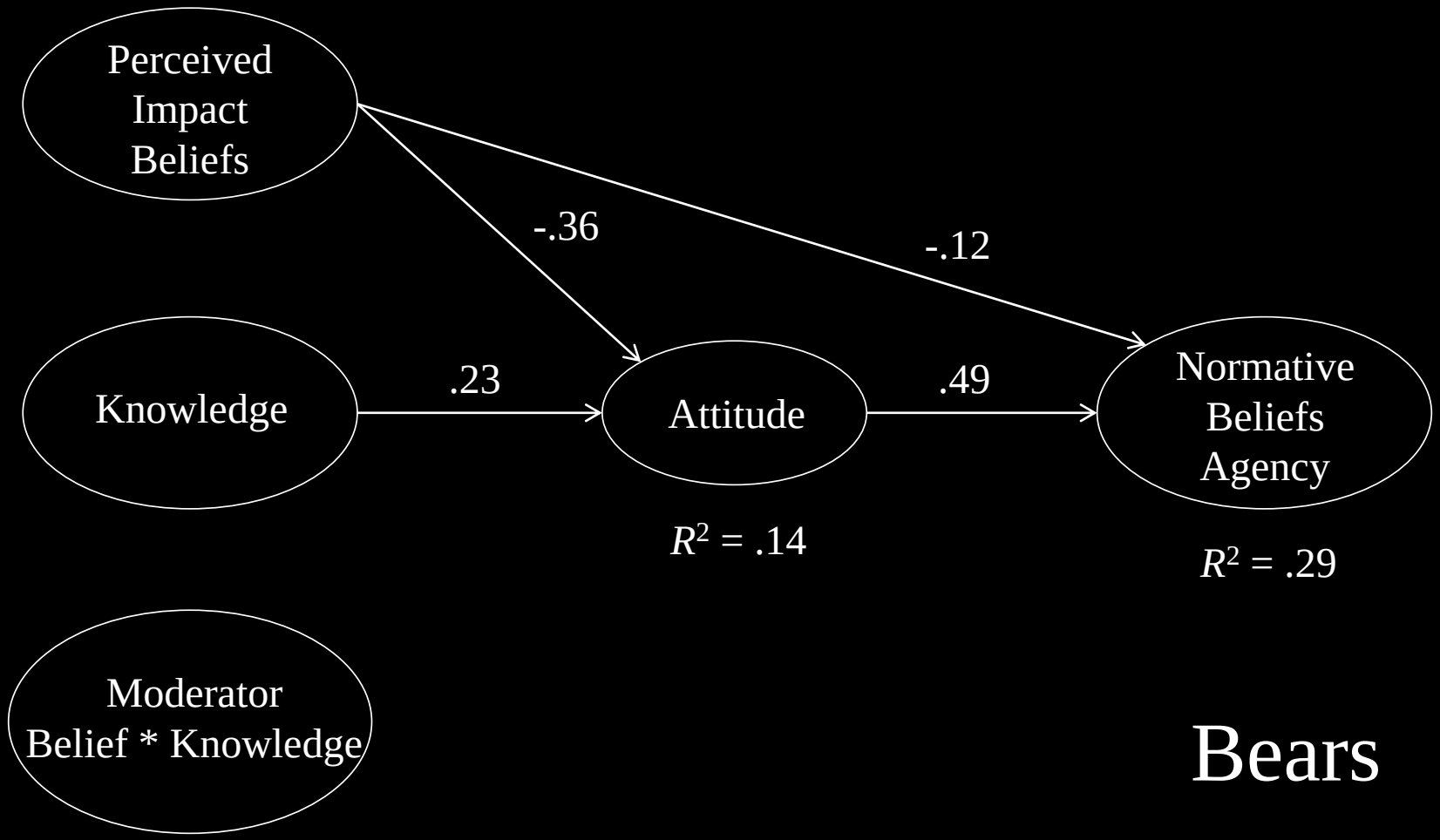


Extending the Knowledge Model to Abruzzo Lazio & Molise NP



Wolves

Extending the Knowledge Model to Abruzzo Lazio & Molise NP



Bears

Emotions

Theoretical perspectives in study of emotions:

- Discrete emotions perspective:
  fear, joy, anger, disgust, interest, surprise, sadness
- Dimensional perspective: e.g. valence, arousal

Conceptual distinction for emotion research:

- States: emotional responses
- Traits: emotional dispositions

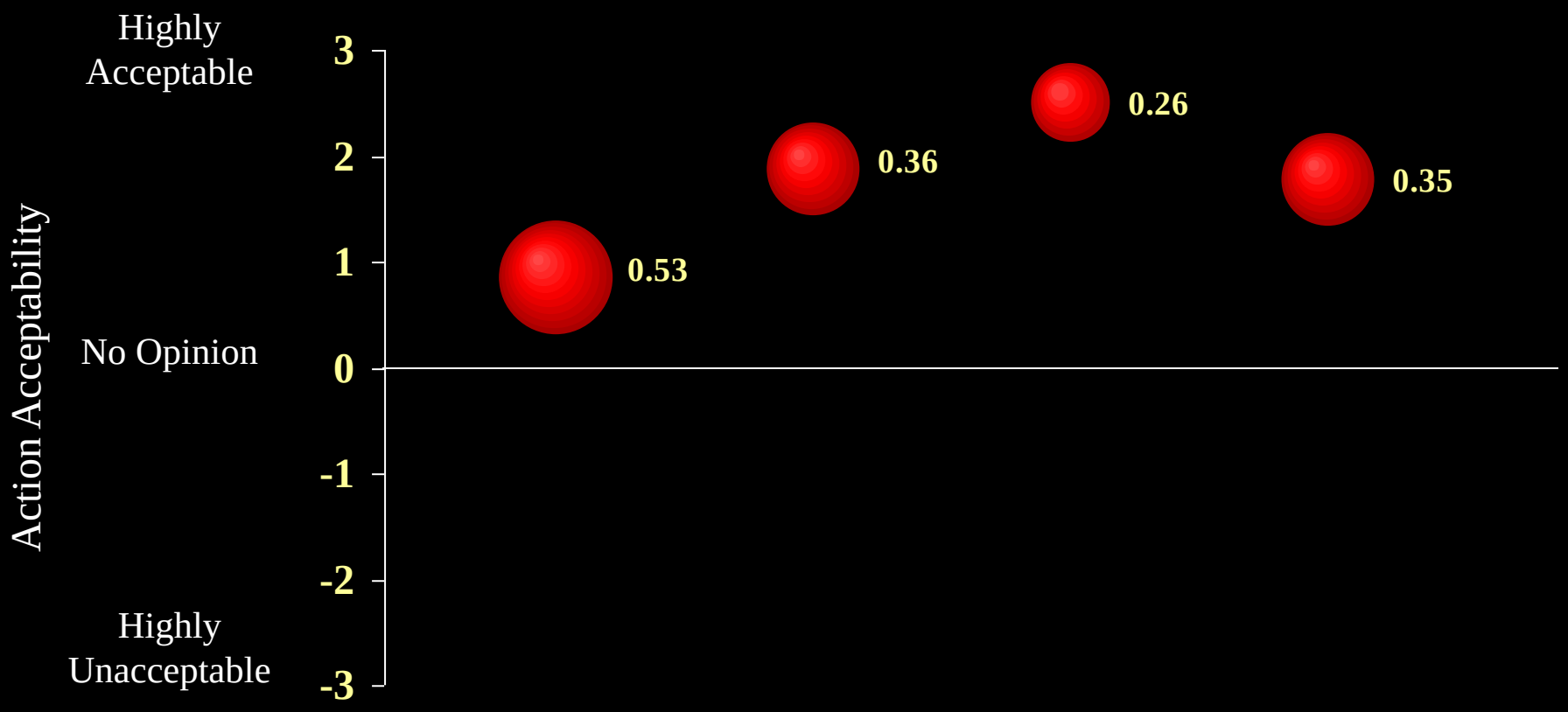
Understanding Emotions using the Potential for Conflict Index PCI_2

Resident Support For Killing Wolves

Status of wolf	Endangered	Endangered	Delisted	Delisted
Land type	Public	Private	Private	Public
Encounter – Wolf:	Chasing cattle	Kills cattle	Kills pet	Kills cattle

Sympathetic – rancher **Neutral** **Sympathetic – wolf**

Resident Support For Killing Wolves



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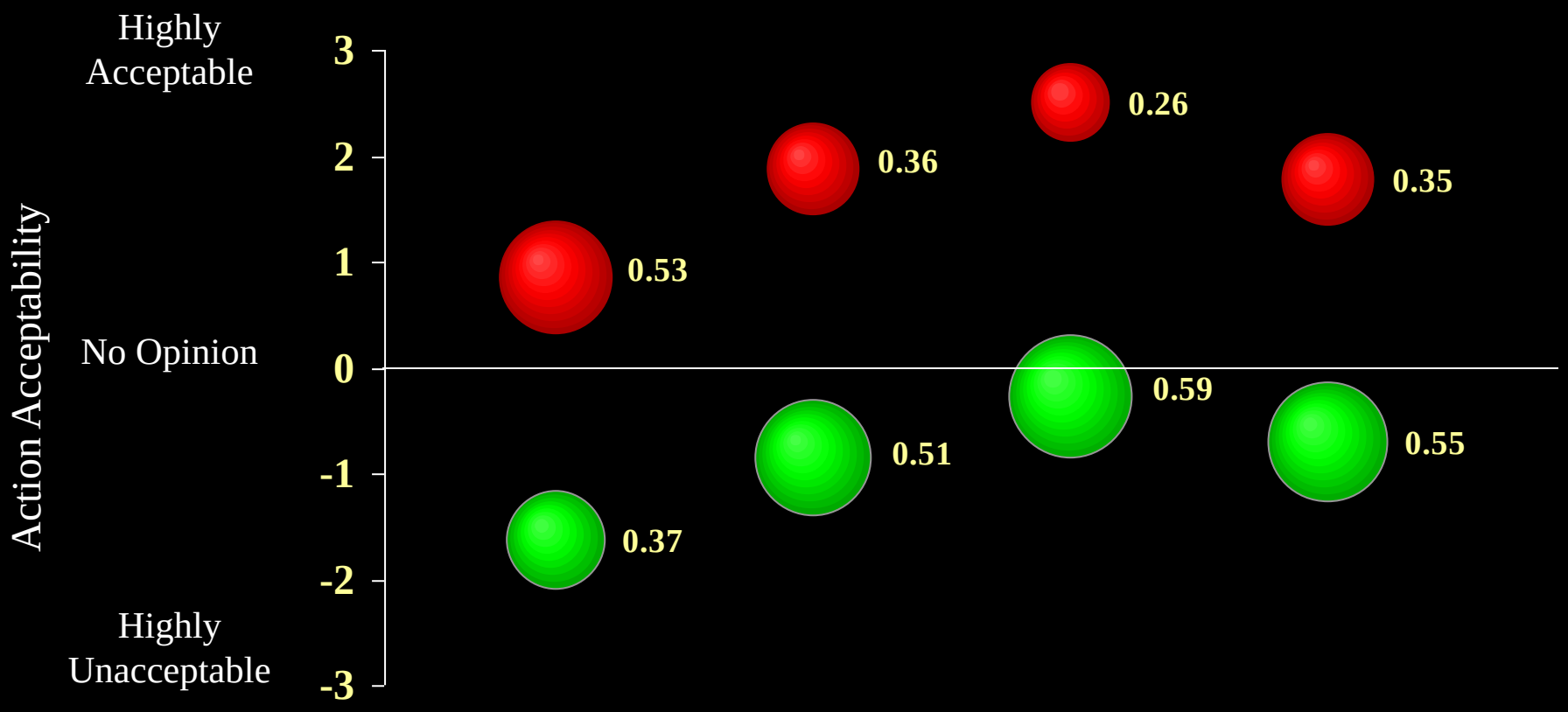

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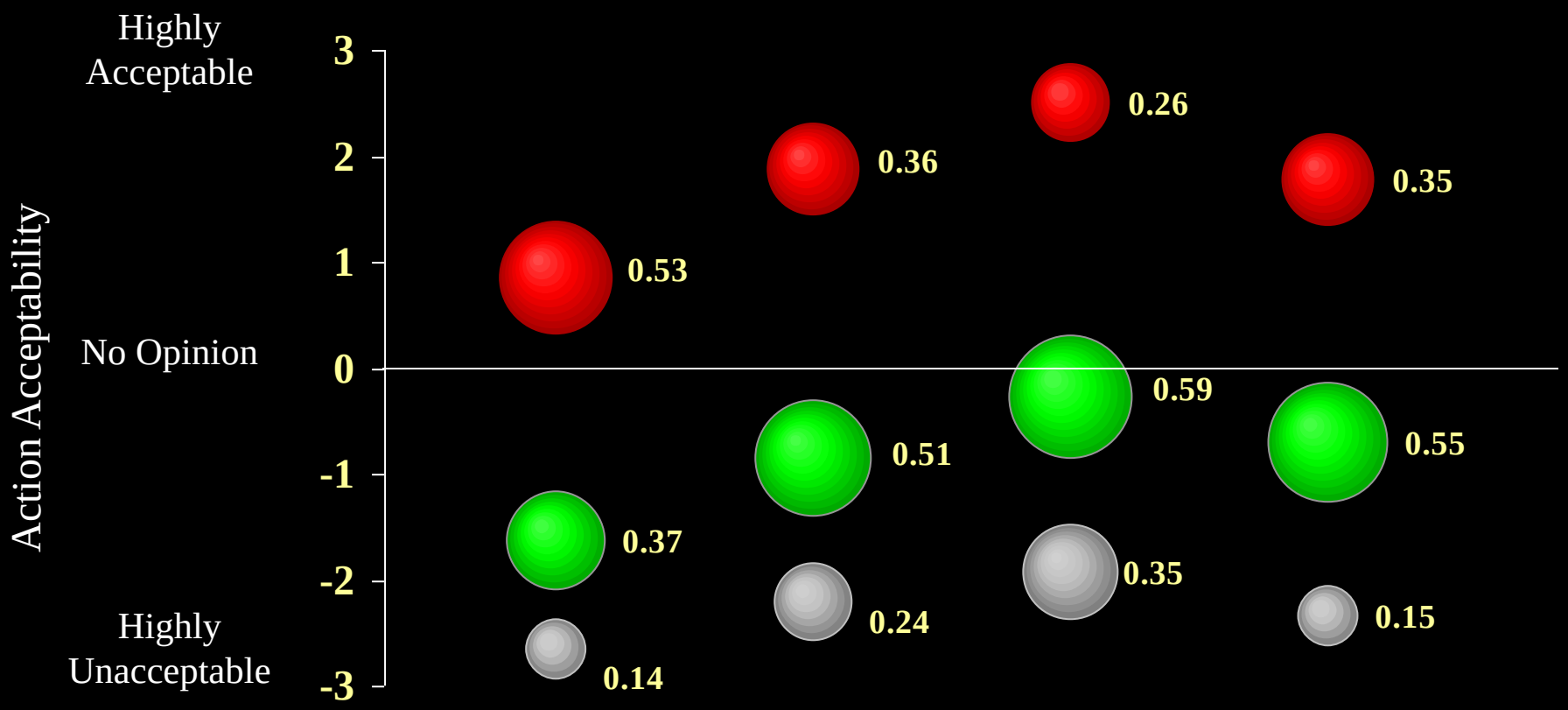

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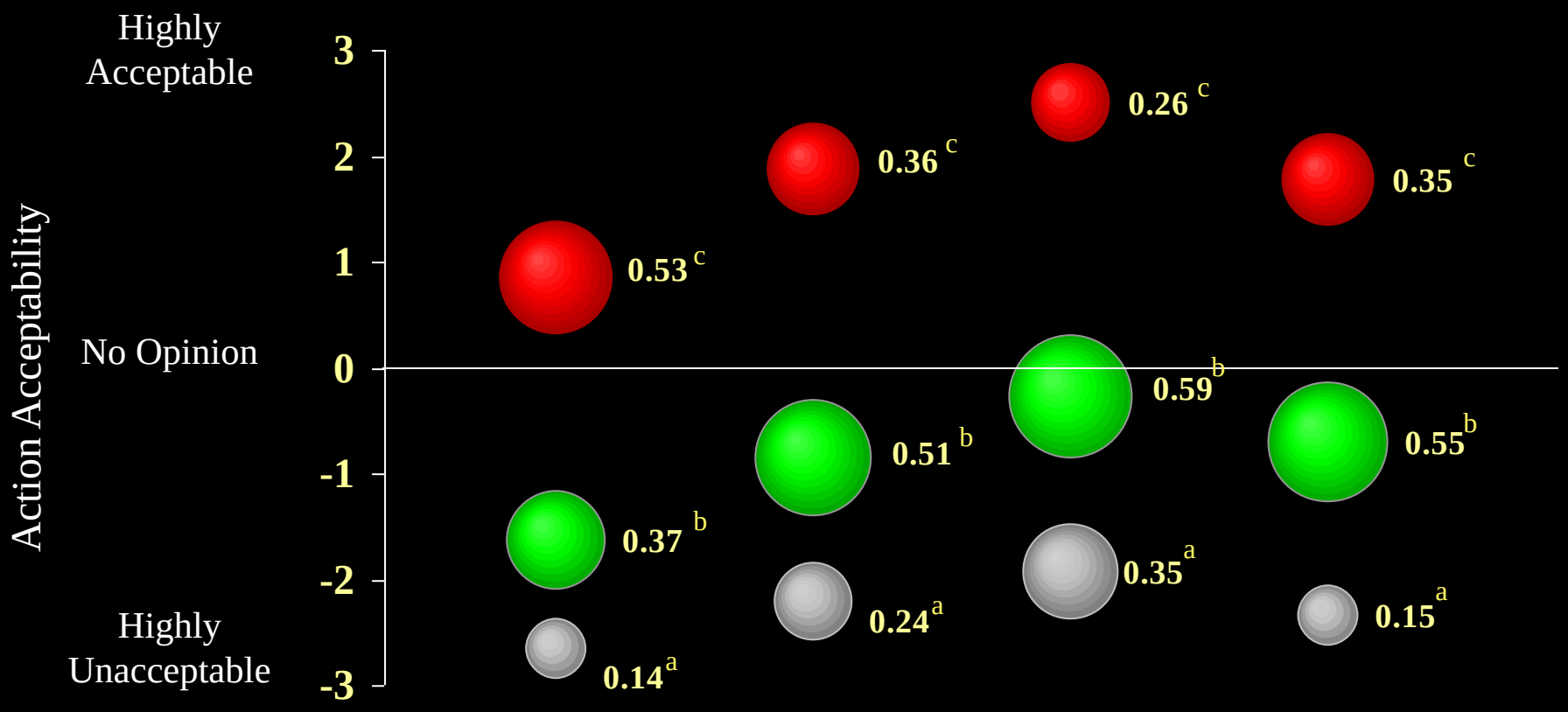

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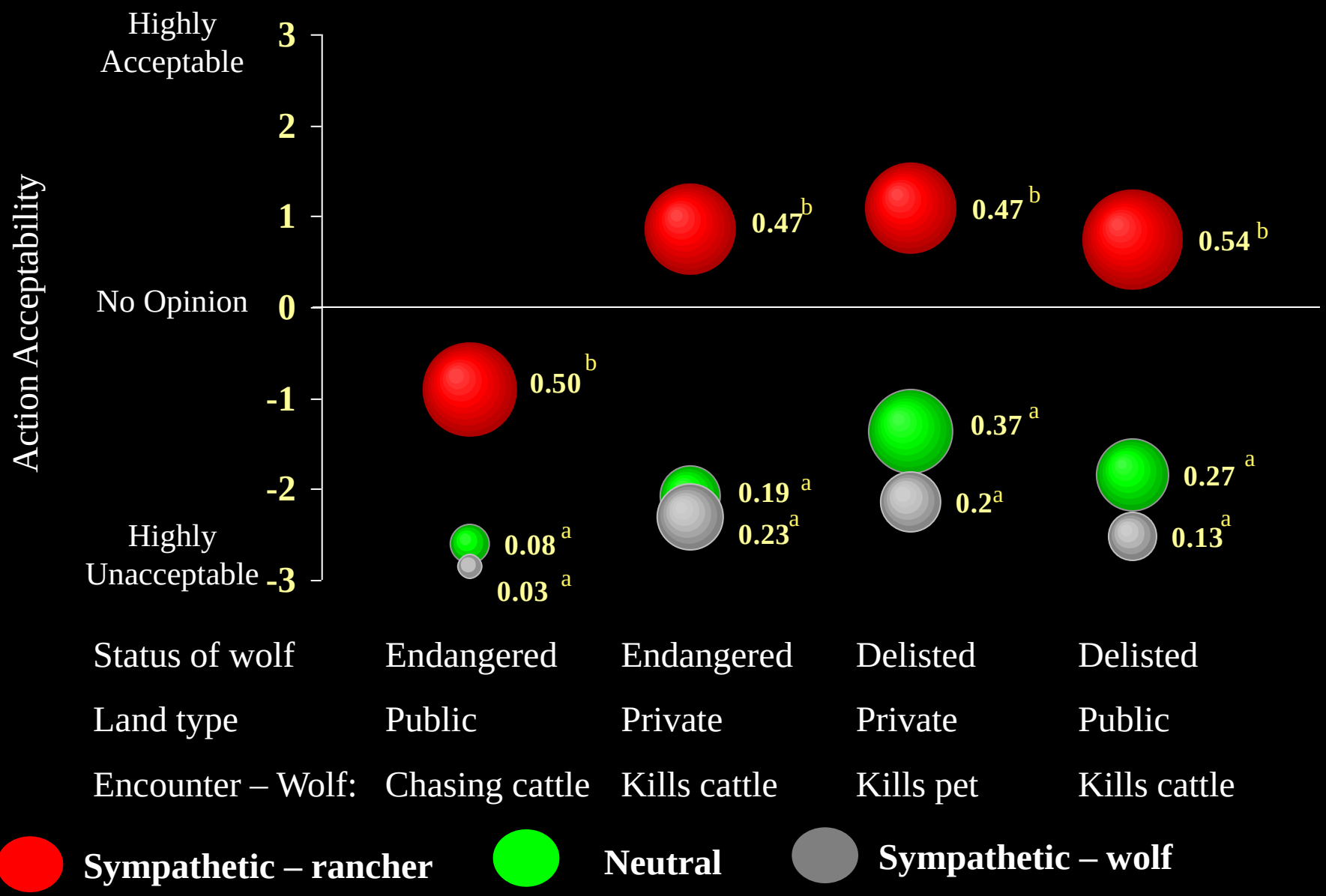
Sympathetic – rancher **Neutral** **Sympathetic – wolf**

Visitor Support For Killing Wolves



Emotions as Predictors

Situational & Emotional Influences on Acceptability of Wolf Management Actions

Jennifer Roemer, Jerry Vaske & Jonathan Taylor, (2011)

Results - Residents

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location				
Wolf status				
R^2 situation model				
Emotion				
Sympathy for ranchers				
Sympathy for wolves				
Anger about presence of wolves				
R^2 emotion model				
R^2 entire model				

Results – Residents

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location	-.067	.001		
Wolf status	.092	< .001		
R^2 situation model	.011			
Emotion				
Sympathy for ranchers				
Sympathy for wolves				
Anger about presence of wolves				
R^2 emotion model				
R^2 entire model				

Results – Residents

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location	-.067	.001		
Wolf status	.092	< .001		
R^2 situation model	.011			
Emotion				
Sympathy for ranchers	-.047	.147		
Sympathy for wolves	.314	< .001		
Anger about presence of wolves	-.046	.132		
R^2 emotion model	.144			
R^2 entire model	.157			

Results – Residents

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location	-.067	.001	.123	< .001
Wolf status	.092	< .001	-.116	< .001
R^2 situation model	.011		.028	
Emotion				
Sympathy for ranchers	-.047	.147		
Sympathy for wolves	.314	< .001		
Anger about presence of wolves	-.046	.132		
R^2 emotion model	.144			
R^2 entire model	.157			

Results – Residents

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location	-.067	.001	.123	< .001
Wolf status	.092	< .001	-.116	< .001
R^2 situation model	.011		.028	
Emotion				
Sympathy for ranchers	-.047	.147	.205	< .001
Sympathy for wolves	.314	< .001	-.351	< .001
Anger about presence of wolves	-.046	.132	.222	< .001
R^2 emotion model	.144		**.485**	
R^2 entire model	.157		.513	

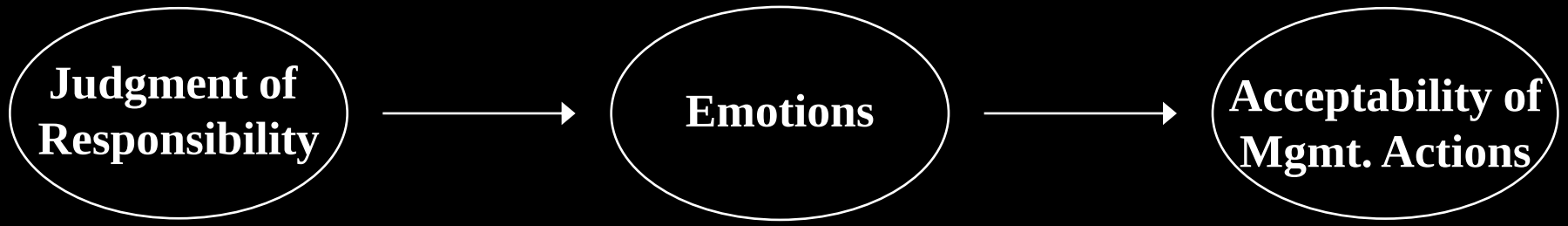
Results – Visitors

	Non-lethal		Lethal	
	β	*p*-value	β	*p*-value
Situation				
Location	.128	< .001	.157	< .001
Wolf status	-.015	.464	-.163	< .001
R^2 situation model	.016		.049	
Emotion				
Sympathy for ranchers	.011	.722	.179	< .001
Sympathy for wolves	.159	< .001	-.412	< .001
Anger about presence of wolves	-.022	.419	.144	< .001
R^2 emotion model	.025		.408	
R^2 entire model	.041		.459	

Judgments of Responsibility, Emotions, & Acceptable Human-Wolf Management Actions

Jerry Vaske & Jonathan Taylor (2009)

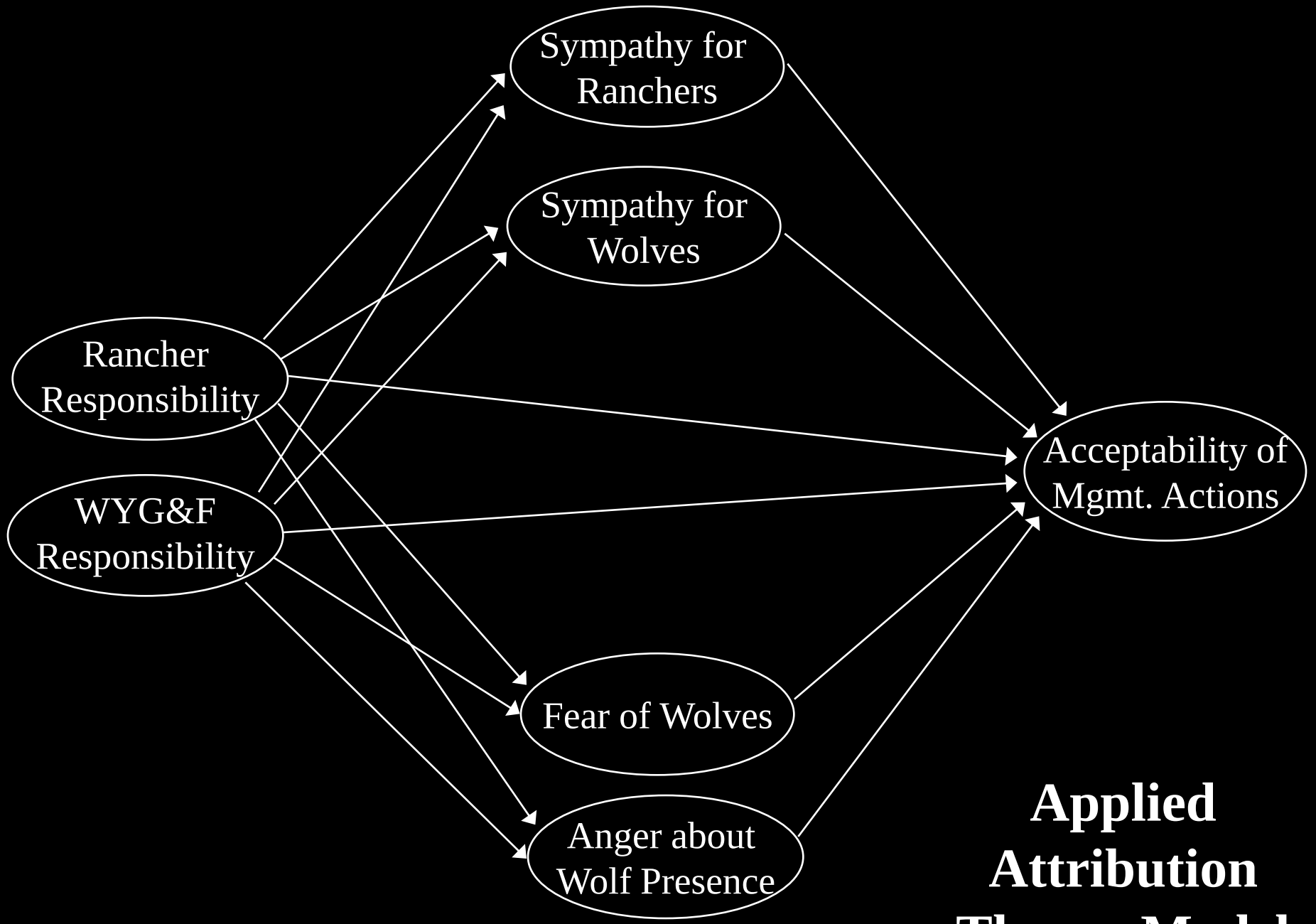
Weiner's (1995) Attribution Theory Model



Person, agency, or animal responsible for conflict

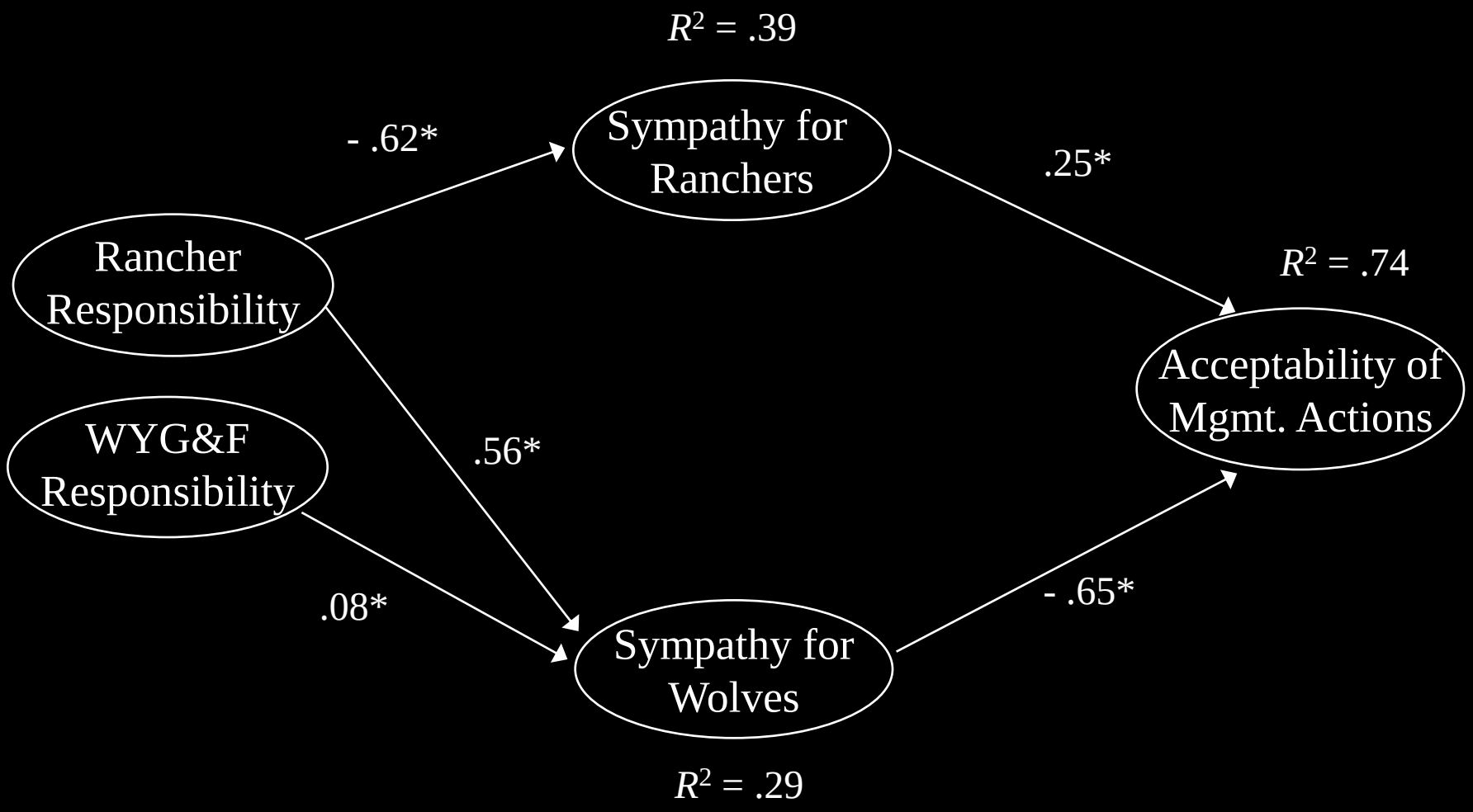
Sympathy, anger, frustration, sadness felt regarding conflict

Management action deemed appropriate as result of conflict

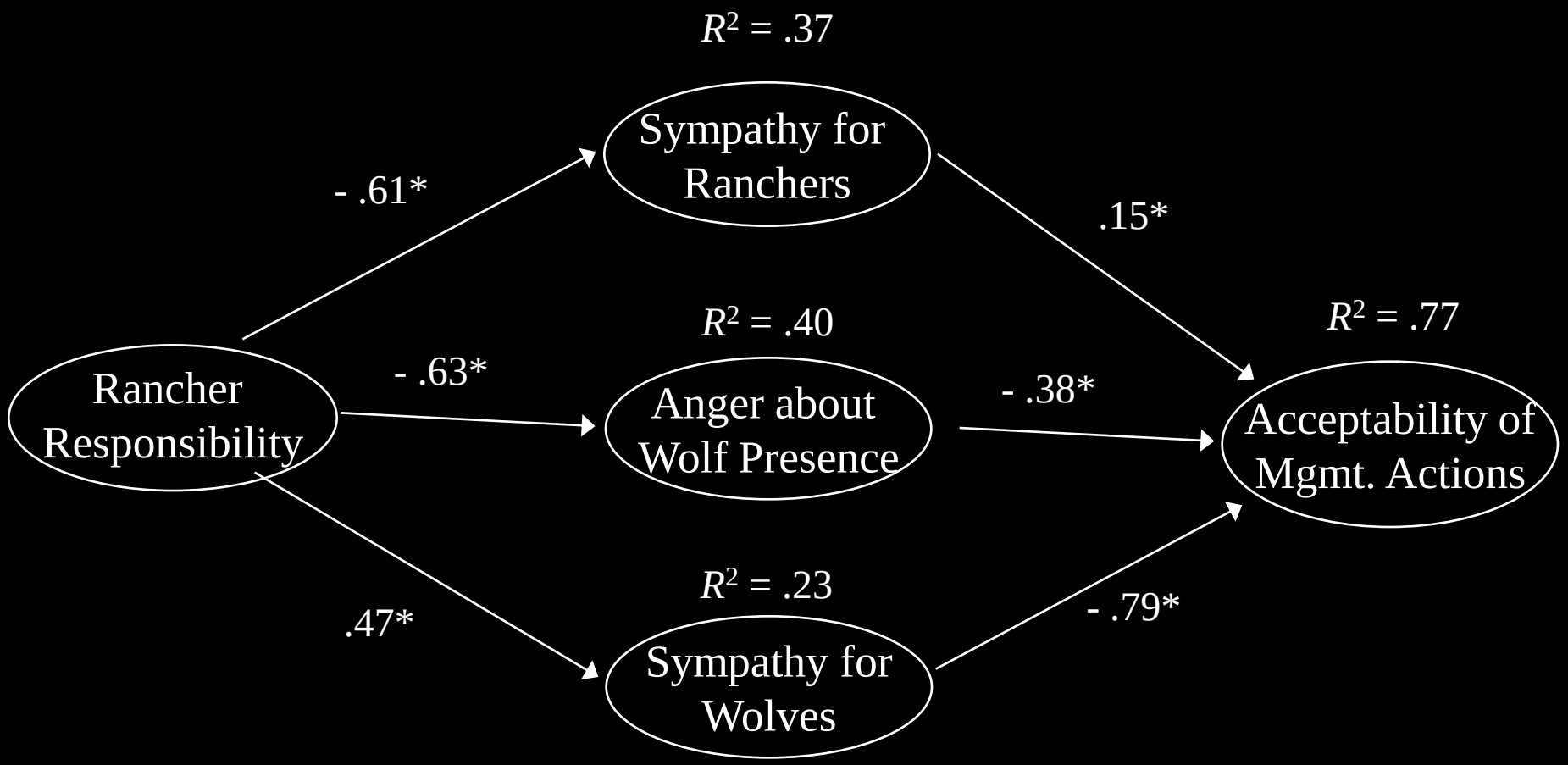


Applied Attribution Theory Model

Resident Model



Visitor Model



Conclusions

- Theory based HD research informs applied questions & enhances the generalizability of the findings

- Analytical tools such as
  - Potential for Conflict Index (PCI_2)
  - Path modeling

  facilitate understanding / predicting consequences of human-wildlife interactions

- Taken together, cognitive and emotional HD concepts can explain substantial amounts of variability in human-wildlife interaction

Future Directions
The Mental Hierarchy