

Professional Identity, Disciplinary Knowledge, and Problem Framing in Interdisciplinary Collaboration: An Exploratory Case Study of a Science Faculty Member

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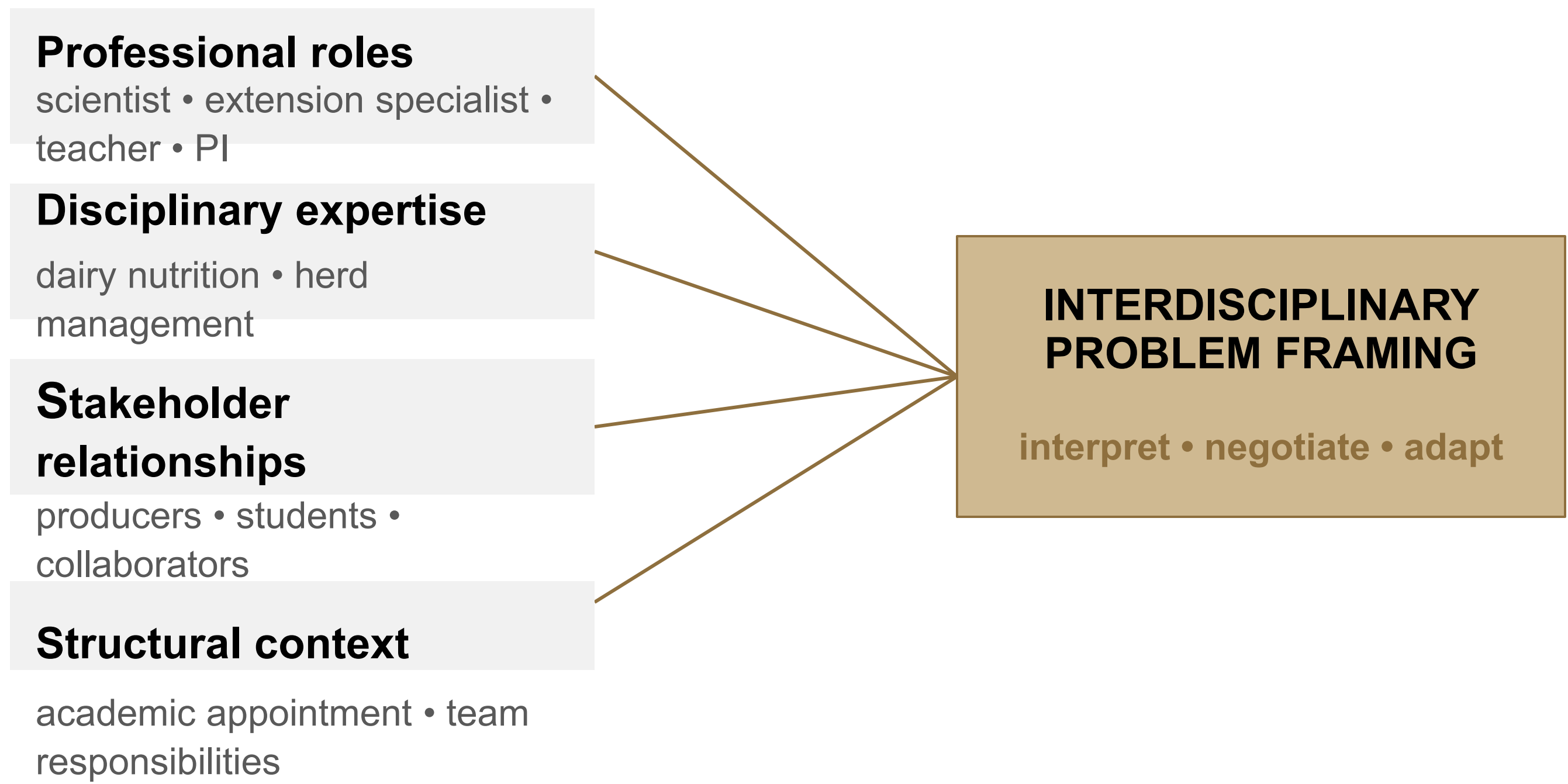
WHY THIS STUDY MATTERS

Interdisciplinary agricultural teams bring together different disciplinary languages, research norms, and expectations. These differences can create cognitive, relational, and identity-based tensions. Yet less is known about how an individual faculty member brings professional identity and disciplinary expertise to the framing of a concrete agricultural problem.

TWO OBJECTIVES

- 01 Examine how one dairy nutrition and herd management faculty member described the ways professional identity and disciplinary knowledge informed an interdisciplinary dairy-production problem.
- 02 Evaluate and refine the semi-structured interview protocol for a subsequent multiple-case study.

IDENTITY THEORY LENS



SCOPE One information-rich pilot case provides contextual insight not representation of animal science or AFNR faculty broadly.

THE CASE

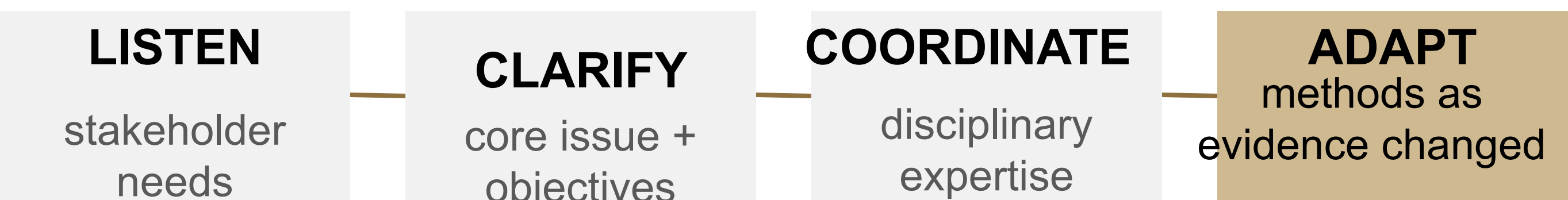
Science Background/ Appointments

Appointment: research, teaching, and extension
Experience: dairy-farm upbringing, early college teaching, and producer engagement
Industry: approximately 5 years in nutrition
Leadership: Dairy project spanning animal science, engineering, video analytics, data integration, and science communication

METHOD AT A GLANCE

- 01 **Design**
Exploratory qualitative case study using purposive selection of one information-rich pilot participant.
- 02 **Data**
One 90-minute semi-structured interview, audio-recorded and CV and transcribed verbatim.
- 03 **Analysis**
Descriptive and in vivo coding, iterative comparison across coded segments, and analytic memoing.
- 04 **Protocol review**
Question clarity, sequence, response depth, and alignment informed revisions to wording and probes.

HOW THEY FRAMED THE PROBLEM



The core problem remained stable while technical strategies changed in response to data volume, engineering iteration, and farm-level constraints.

PROTOCOL CONTRIBUTION

The pilot elicited detailed links among identity, disciplinary reasoning, stakeholder relationships, and problem framing—while identifying terms, sequencing, and probes to refine.

FOUR CASE-SPECIFIC FINDINGS

- 01 **IDENTITY EVOLVED ACROSS CONTEXTS**
Their identity as a scientist and extension specialist developed through dairy-farm experience, mentorship, formal education, industry work, and the transition to academia.
- 02 **A PRODUCER-CENTERED LENS**
Dairy nutrition and management knowledge oriented research toward practical usefulness across diverse dairy operations and toward outputs producers could act on.
- 03 **FRAMING PRECEDED SOLUTIONS**
She framed the problem through listening, questioning, stakeholder understanding, and collaborative objective setting not by beginning with a predetermined solution.
- 04 **DIFFERENCES REQUIRED PIVOTS**
Animal science's structured experimental orientation and engineering's iterative development differed in terminology, expectations, and research logic, requiring adaptive team decisions.

CONCLUSION

Within this case, dairy-farm experience, disciplinary expertise, industry practice, extension responsibilities, and interdisciplinary leadership were intertwined in how the participant understood and framed a complex dairy-production problem.

Case-specific insight not a field-wide conclusion.

NEXT PHASE

Apply the revised protocol to multiple science and engineering faculty in a shared interdisciplinary food-systems project. Use within-case and cross-case analysis to examine similarities and differences in problem framing. For animal-science claims, sample multiple species and areas: nutrition, breeding/genetics, reproduction, physiology, welfare, and production management.

Scan Me: References

