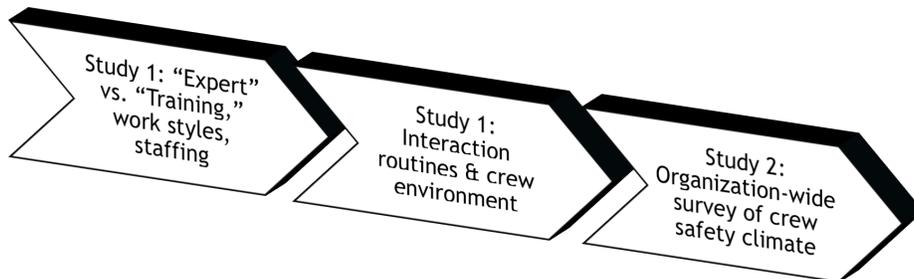


* **Communication and High Reliability:
How the Crew Environment Facilitates or Inhibits
Wildland Firefighter Learning**



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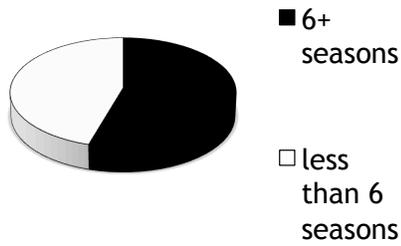
- *RQ1: How do fire experience narratives from the two crews differ in the ways that firefighters enact rules and routines while they coordinate on firefighting activities and take actions in managing fires?
- *RQ: What are the norms that differentiate between the two crews? How do these norms point to different sets of sustained practices for implementing rules and routines?

*Study 1 RQs

- *27 interviews from 2 rappel crews
 1. Crew environment: norms, values, uniqueness
 2. Fire experience narratives
- *Grounded theory analysis (Strauss & Corbin, 1998)
- *Mixed methods design
 - *Study 1 qualitative findings informed development of Study 2 quant. survey

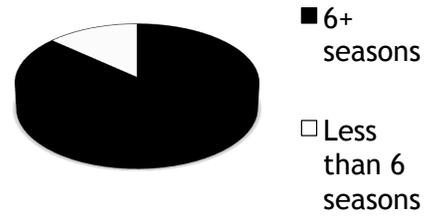
*Study 1 Methods

Training Crew



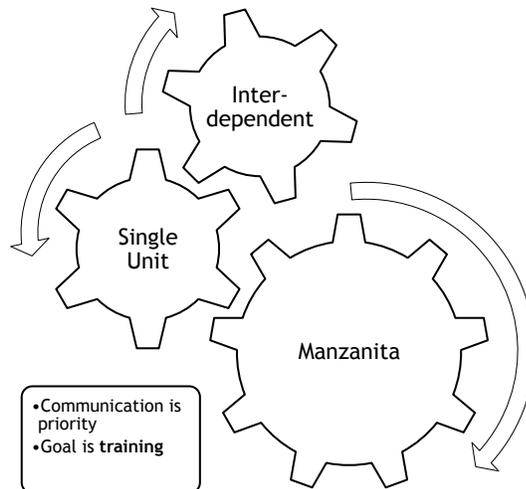
- Manzanita
- * 20 members (12 interviewed)
 - * Many apprentices
 - * High turnover
 - * 1 helicopter; travels together as crew

Expert Crew

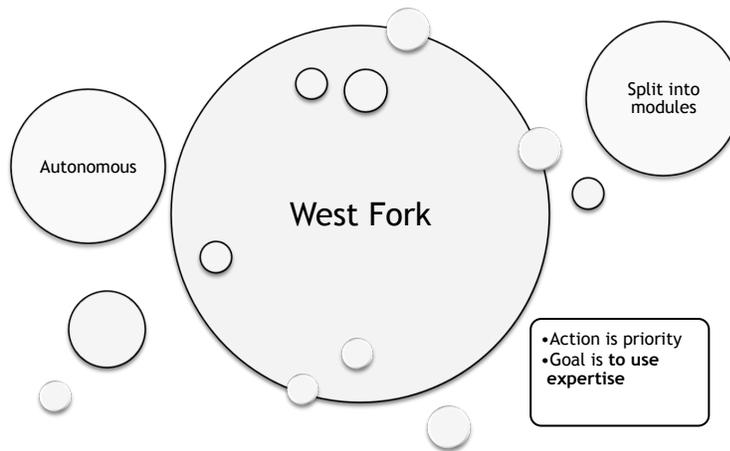


- West Fork
- * 25 members (15 interviewed)
 - * Highly experienced
 - * Low turnover
 - * 2 helicopters; rotate among modules

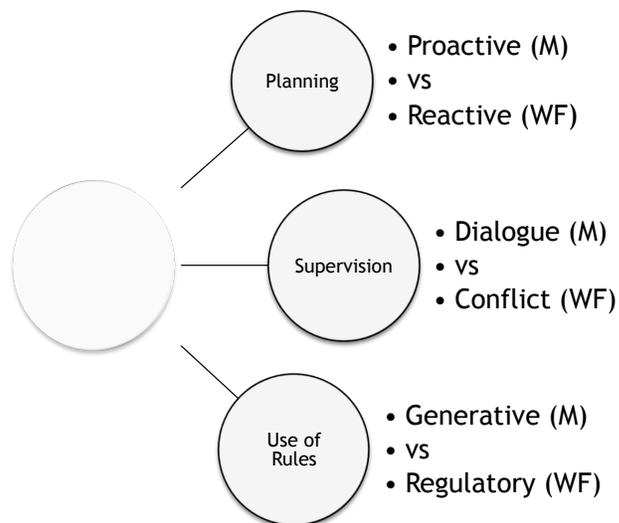
* Comparison: 2 Heli-Rappel Crews



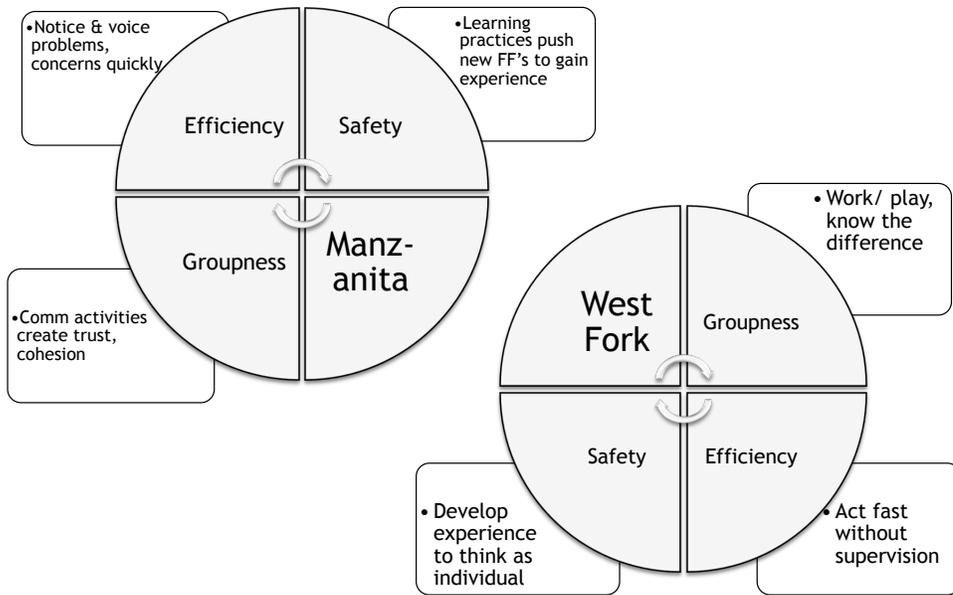
* Staffing & Work Styles



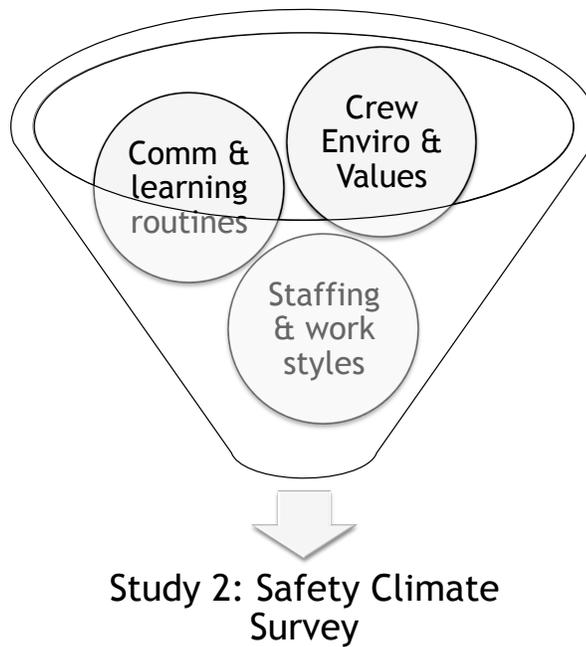
*Staffing & Work Styles

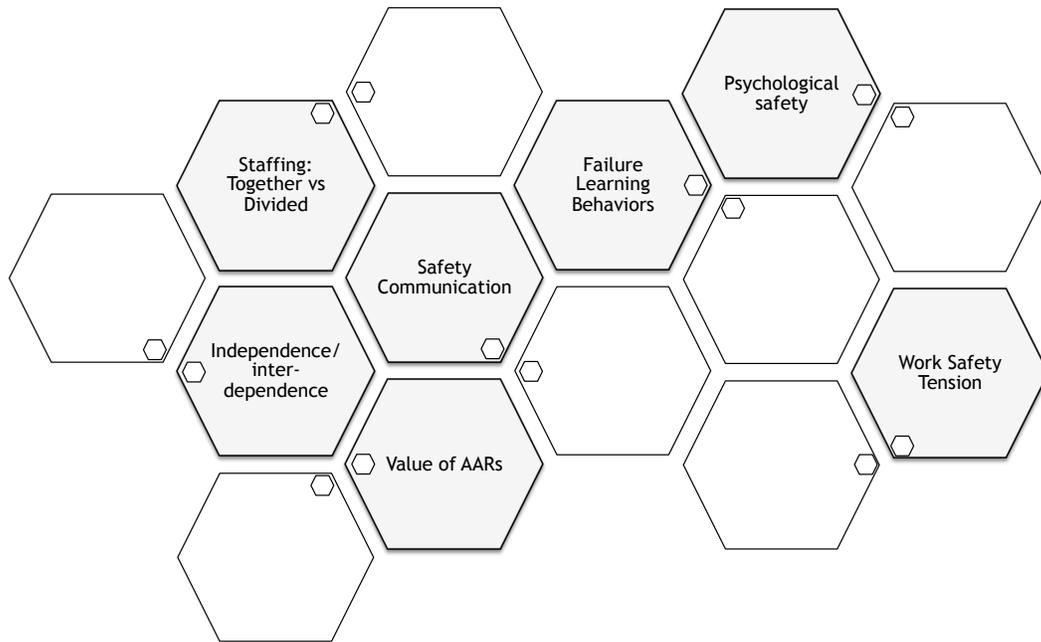


*RQ1: Crew Interaction Routines



*RQ2: Crew Norms





*Study 2 constructs

*N=220 WFF crews

* T2 Handcrew, Hotshots, Engines, Helitack/Rappel

*Analyses

* Basic inferential statistics

* Structural equation modeling

*Study 2

- * H1: Crews' safety communication, failure learning, psychological safety, and frequency and value of AARs are predictive of crews' work safety tension.
 - * Significant: $F(5,214)=6.815, p<.01$
 - * Safety Comm (Beta=-.49), $p<.01$
 - * AAR value (Beta=-.23), $p<.05$
- * H2a: Crew prestige predicts work/safety tension.
 - * Significant: $F(1,218)=3.19, p<.05$;
 - * Direction of relationship: Beta= -.182
- * H2b: Crew task independence explains the relationship between crew prestige and work/safety tension.
 - * SEM Model significant.
 - * High crew prestige→high independence→low work safety tension

*Select Hypotheses & Findings

- * Differences between crew types (engines, helitack, etc.) on the constructs.
- * How independence vs. interdependence; together vs. divided staffing shape how the constructs relate to one another.
- * Sort out relationships between the crew practices (safety comm, failure learning, freq of AARs) and the feel of the crew environment (psych safety).

*Other Analyses

***Thank you!**