Taking an Applied Psychology approach to safety in agriculture

Dr Amy Irwin
Meet the NTSAg team
Find out about the aim of NTSAg

Who we are

Quick overview of our research projects
A bit more detail on two recent projects: livestock handling and situation awareness

Our research

Our review of research on the effectiveness of safety communication strategies
The importance of encouraging farmers to speak up about safety

Safety communication
Meet the NTSAg team

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Non-Technical Skills in Agriculture

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Research assistant for NTSAg

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PhD student
Designer for NTSAg materials
What We Do

Our Research
Applied Psychology and Human Factors approach to Farmer safety: Why do people behave the way they do?

Our Goal
Produce relevant research that provides insight into farmer behaviours such as risk taking, decision-making and non-technical skills

Our Mission
Use our research findings to produce educational materials and design interventions to improve farmer safety
1. Interview study examining non-technical skill use in agriculture
2. Survey study examining predictors of non-technical skills in farmers
3. Scenario based study examining decision-making strategies when operating tractors
4. Scenario based study examining decision-making strategies when handling livestock
5. Survey study examining situation awareness requirements when operating tractors
Project 4: Handling Livestock

Background
Handling cattle is a high risk activity.
We wanted to explore farmer risk management strategies.

Method
56 farmers assessed 8 cattle risk scenarios.
Example: You recently borrowed a dairy bull from a neighbour's farm. You need to enter the bull pen to perform maintenance.

Results 1
Farmers more likely to ‘go’ when tired or stressed, but not when dealing with unfamiliar livestock or poor equipment.

Results 2
Reported non-technical skills included:
Task management, decision-making, situation awareness.
Project 5: Situation awareness in tractor driving

Background
Situation awareness is a vital cognitive skill for driving any vehicle: Perception, comprehension, anticipation

Method
Qualitative survey
Open-ended questions about driving tractors, perceived risks and safety procedures

Results 1
Situation awareness requirements included: mental map of farm, vehicle status, task management

Results 2
Factors leading to lapses in situation awareness included: distraction, fatigue, stress, poor visibility
The checklist

01 Research
Identify situation awareness requirements and lapses

02 Collaborate
Work with Lantra, Teagasc, Elizabeth Creed, IOSH and Women in Agriculture to design checklist

03 Usability test
50 copies of checklist and guide sent out to farmers

04 Edit and develop web-app
Checklist will be edited on basis of feedback. The online web version will then be developed.
Focusing on communication.

The final section of this presentation will focus on using Psychology principles to consider, and enhance, communication and speaking up about safety.
Enhancing safety communication based on Psychology principles

- Barriers to safety campaigns
  - Messages based on fear and guilt might be avoided
  - If the suggested strategy requires effort or costs money it might be ignored
  - Safety messages may change risk perception but not behavior
  - Low self-efficacy means a reduced likelihood of behavior change

- Suggestions for enhancing effectiveness
  - Share positive stories and examples of best practice
  - Ensure any additional knowledge or training is easily accessible and linked to the original message
  - To change behavior messages must be specific, relatable and ideally show a farmer engaging in the behavior
  - Enhance self-efficacy and ownership
Speaking up about safety

- **Barriers to speaking up**
  - Fear of reprisal
  - Lack of trust
  - Concerns about lack of experience
  - Fear of addressing senior staff
  - Seeing risks as part of normal life

- **Suggestions for encouraging speaking up**
  - Support safety initiatives
  - Anonymous reporting
  - Encourage safety above productivity
  - Lead by example

- **How to speak up**
  - Observation
  - Clarification
  - Request
  - Challenge
Get in touch to find out more!

@NTS_Ag
https://research.abdn.ac.uk/nts-farming/

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