# Incidental Perceptions Shape Strategies for Responding to Violence:
## Evidence from a Lab-in-the-Field Experiment in Kenya

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## How do ordinary people make strategic decisions during violence?

Observational perceptions suggest *control* and *uncer- tainty* shape preferences for ap- proach/avoid and disruptive/mod- erate strategies of survival [7].

| | Orientation to Threat Avoid Approach | Perceptions of violence affect propensity to |
|---|---|---|
| Disruptiveness Moderate | Flee Fight | *flee, fight, adapt to a violent environment, or hide from danger.* |
| Extreme | Hide Adapt | |

### Why would this be true?

- *Control* appraisals associated with approach/avoid behavior in many settings outside violence [4, 2]
- "Unexpected" *uncertainty* is associated with larger behavior deviations in psych and neuroscience research [8, 6]

> I manipulate perceptions about hypothetical violence in a lab-in-the-field experiment.
>
> Changing perceptions changes strategy preferences.

## (Primary) Hypotheses

**H1:** Higher perceived *control* increases likelihood of choosing "approach" strategies (i.e. fighting, adaptation).

**H2:** Higher perceived *uncertainty* increases likelihood of choosing "disruptive" strategies (i.e. fighting, fleeing).

Pre-registered at: https://osf.io/rehp3

## Study Sample

- 1,506 participants from Katoloni locality, Machakos, Kenya
- 48/52 men-women split
- Median education: Secondary
- 70% involved in agriculture
- Most attend church > monthly
- 37% violence exposure (family)

Machakos County

## Lab-in-the-Field Setup

- Implemented by Busara Center for Behavioral Economics, with investigators from U. Capetown, Columbia, U. Dar Es Salaam, Harvard, Makerere U., MIT, U. Nairobi, Uganda Christian U.
- "Omnibus" design: 10 modules mostly-random order
- Other modules study: personality traits, savings and investment decisions, gambling, climate resilience, trust in mobile money etc.
- H1 and H2 treatments separately randomized (2×2 between subjects), QoI is marginal component effect of each treatment
- ≤ 20 participants in 100 sessions do tasks on touchscreen tablets
- Lab sessions last up to 120 minutes, 329 Ksh. avg. incentive payout
- Perception treatment embedded in cash-incentivized game
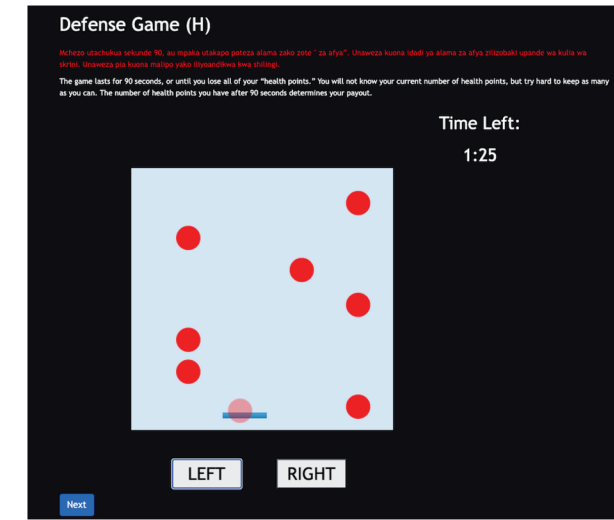
## Manipulating Perceptions of Violence

### Control Manipulation
- Participants assigned to higher/lower game difficulty
- Randomizes ability to keep in-game "lives," worth real money ( a loaf of bread)
- Successful manipulation:
  - 44.6 Ksh. inter-group difference in payout ($p < .001$)
  - 29pp difference in perceived control over outcome ($p < .001$)

### Uncertainty Manipulation(s)
- Participants see more/less information about game
- Successful manipulation for high difficulty group (p = .006), high variance in other group
- **BUT** other omnibus modules manipulate uncertainty about other concepts (like future reliability of livelihood, or riskiness of small gambles)
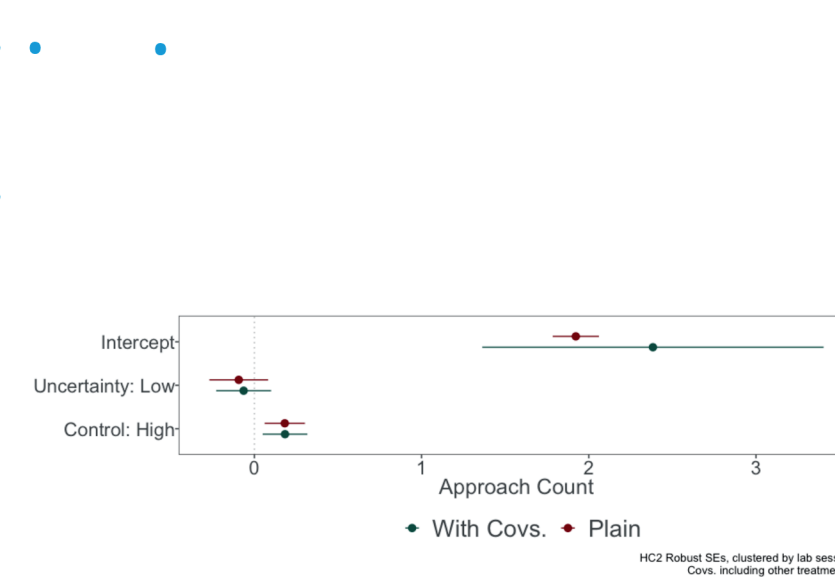
Treatment assignment flow across survey modules. Each "level" is randomized separately.
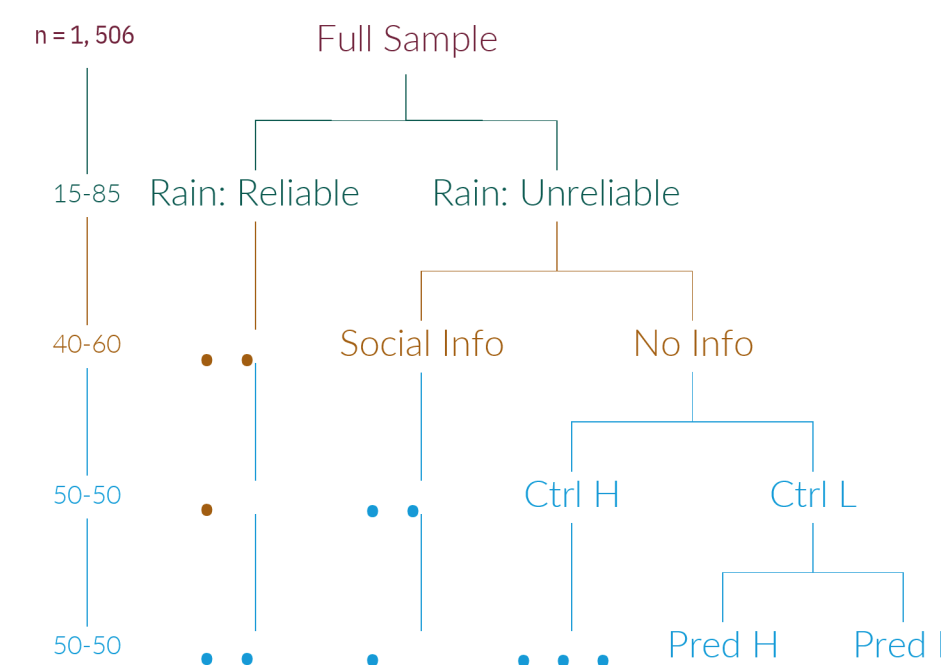
## Control and Uncertainty Affect Strategy Preferences

### Control :: Approach
- High control perception increases preference for approach strategies by 7.5pp in an pre-registered index of four decisions (95% power to detect)
- Big signal, considering treatment intensity

### Uncertainty* :: Disruptiveness
*with combined treatments
- Effect of main uncertainty treatment is small, insignificant (3.8pp, p = .443)
- When uncertainty treatment is aligned with rainfall un-reliability, gambling uncertainty treatments, effects are surprisingly large (35.5pp, p = .005; 17.7pp, p = .032; min. 89% power to detect)

Interactions [3]: Rainfall Ambiguity, Social Uncertainty Ambiguity
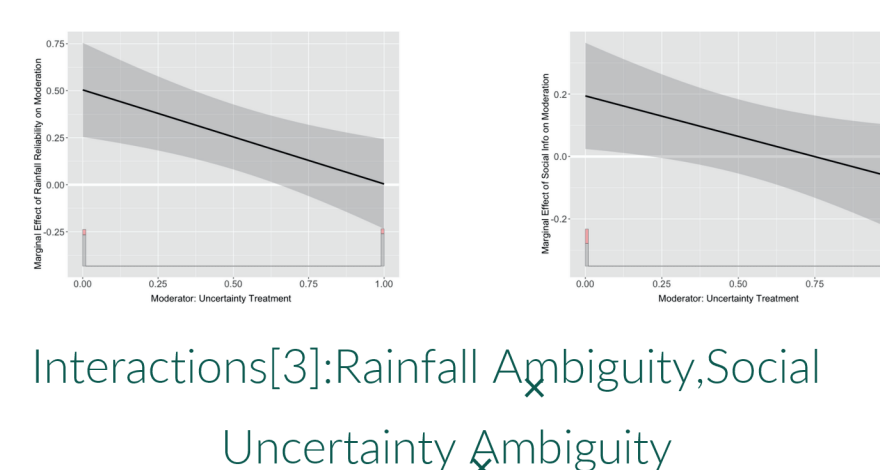
## Interference & Incidental Treatments

### Substantive Finding
- Very incidental perceptions (even holdovers from other modules) *may* affect strategy preferences during hypothetical violence
- Difference driven by interpretation not information: Hypothetical violence description held constant across all treatment conditions

### Experimental Methods Implica-tions
- In studies with multiple treatments, previous, seemingly un-related treatments can spill-over. Important to:
  - Know how they relate to D in your study
  - Check that treatment statuses are not correlated
  - Consider controlling for them?
- Beware of especially exciting treatments [1]!

A study participant wins a soccer bet

## Discussion

- "Shared" studies are increasingly common
- Many independently randomize, randomize order, ignore other modules
- This procedure shouldn't bias estimates, but you might *mis-characterize the treatment*
- It's also a missed opportunity for more precision [5]

## References

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[3] Jens Hainmueller, Jonathan Mummolo, and Yiqing Xu. How much should we trust estimates from multiplicative interaction models? simple tools to improve empirical practice. *Political Analysis*, 27(2):163–192, 2019.

[4] Jennifer S. Lerner and Dacher Keltner. Beyond valence: Towards a model of emotion-specific influences on judgement and choice. *Cognition and Emotion*, 14(4):473–93, 2000.

[5] Winston Lin. Agnostic notes on regression adjustments to experimental data: Reexamining Freedman's critique. *The Annals of Applied Statistics*, 7(1):295 – 318, 2013.

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[8] Angela J. Yu and Peter Dayan. Uncertainty, neuromodulation, and attention. *Neuron*, 46(4):681–692, 2005.

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