

# Revisiting valid instruments: A Bayesian approach

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# Valid Instruments

- ▶ Satisfy the exclusion restriction
- ▶ Satisfy the monotonicity assumption
- ▶

# Valid Instruments

- ▶ These assumptions are relevant whether you use IVs to evaluate causality or in traditional simultaneous equation models.

# The Phenomenological Bayesian Approach

- ▶ Causal inference is framed in terms of potentially observable outcomes for all units to all treatments.
- ▶ What about the counterfactual problem? – It doesn't exist for Bayesians.

## In the morning

*# Generate data*

```
n <- 1000
```

```
z <- rnorm(n)
```

```
x <- 1 + 2*z + rnorm(n)
```

*# True model specified by instrument*

```
e <- rnorm(n, 1)
```

```
y <- 3 + 1.5*2*x + e
```

# Getting up

- ▶ Turn off alarm
- ▶ Get out of bed

# Breakfast