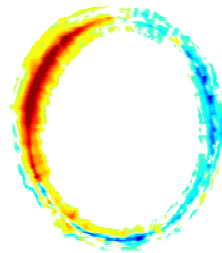


# “Weather Roulette” Game

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# Forecast Value

## *Forecast quality*

Do the forecasts correspond well with the observations?

## *Forecast value*

Do the forecasts enable beneficial decisions?

Hagedorn, R., and L. A. Smith, 2008: Communicating the value of probabilistic forecasts with weather roulette. *Meteor. Appl.*, DOI: 10.1002/met.92.



# “Weather Roulette”

- “Seasonal Supplies” (General Stores)
  - *Rain-coats*
  - *Shirts*
  - *Sun hats*

If rainfall is “above-normal” you can sell only rain-coats.

If rainfall is “normal” you can sell only shirts.

If rainfall is “below-normal” you can sell only sun hats.

Your customers are fashion-conscious - you cannot sell anything that you did not sell last year.

The government will take as tax any money you do not use to stock your store (or lend to shop owners that have gone bust ...).



# “Weather Roulette”

Start with \$100.

Purchase items from wholesalers for \$1 each.

Sell each item for \$3 each.

How many of each do you buy at the start of the season given a seasonal forecast?

Profits and losses carried over to next year.

If you go bust, you can borrow money from other shop owners at whatever interest rate you can negotiate. You have to pay the interest back as soon as you can.



# “Weather Roulette”

Example.

You have \$100, and based on the seasonal forecast you decide to buy:

50 rain-coats

30 shirts

20 sun hats

Rainfall is above-normal.

You sell 50 raincoats at \$3 each, and so now have \$150 for next year's supplies.



# “Weather Roulette”

Note:

If you buy equal numbers of rain coats, shirts, and hats, you will break even.

You can maximize your expected profit by spending all your money on the one item you think is most likely to sell.

BUT, this means you will have a VERY small chance of making a massive profit, and a VERY high chance of going bankrupt! So invest wisely.

You have no information as to whether the forecasts are good or bad.

