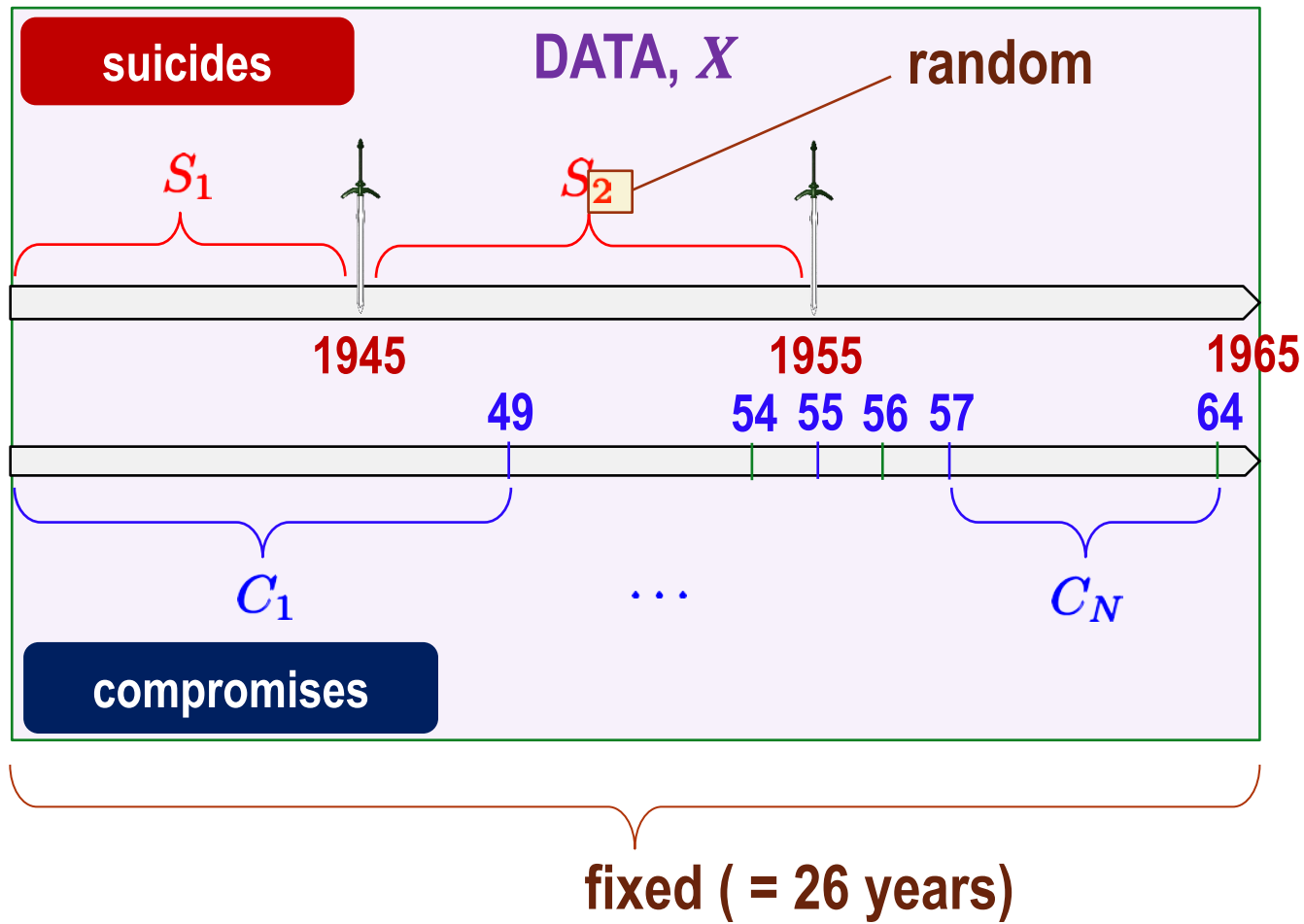


SCENARIO 1



SCENARIO 2

Mini-project (part 2):

Scenario 1: Suppose time now is 1966 when Huizhu had just had her 3rd suicide.

Target for estimation: $\mathbb{P}(\text{no compromise between first two suicides}) = ?$
 $\searrow = \theta(F, G)$

Nonparametric mle of $\theta(F, G)$: $\theta(\hat{F}, \tilde{G}) = ?$

- (a) Construct bootstrap cdf of estimation error $\theta(\hat{F}, \tilde{G}) - \theta(F, G)$
- (b) Derive bootstrap estimates of
 - (i) Bias = $\mathbb{E}[\theta(\hat{F}, \tilde{G}) - \theta(F, G)]$
 - (ii) MSE = $\mathbb{E}[(\theta(\hat{F}, \tilde{G}) - \theta(F, G))^2]$
 - (iii) Standard deviation = $\sqrt{\text{MSE} - \text{Bias}^2}$
 - (iv) MAD = $\mathbb{E}[|\theta(\hat{F}, \tilde{G}) - \theta(F, G)|]$

Deadline:
6 Dec 2024 (6pm)
*for complete project
(parts 1 & 2)*

Scenario 2: Suppose time now is 1965

(hence less data available compared to Scenario 1)

Repeat above exercises.