

# **Confirming Recall Adequacy With Unbiased Multi-Stage Acceptance Testing**

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# Examples: Direct Recall Estimation

	Case 1	
Total Docs	100,000	
Top Ranked Docs Reviewed	10,000	
Relevant Docs Found	5,830	
Docs Reviewed for Direct Recall Est.	5,800	
<b>Total Review</b>	<b>15,800</b>	

# Examples: Direct Recall Estimation

	Case 1	Case 2
Total Docs	100,000	100,000
Top Ranked Docs Reviewed	10,000	4,000
Relevant Docs Found	5,830	950
Docs Reviewed for Direct Recall Est.	5,800	35,000
<b>Total Review</b>	<b>15,800</b>	<b>39,000</b>

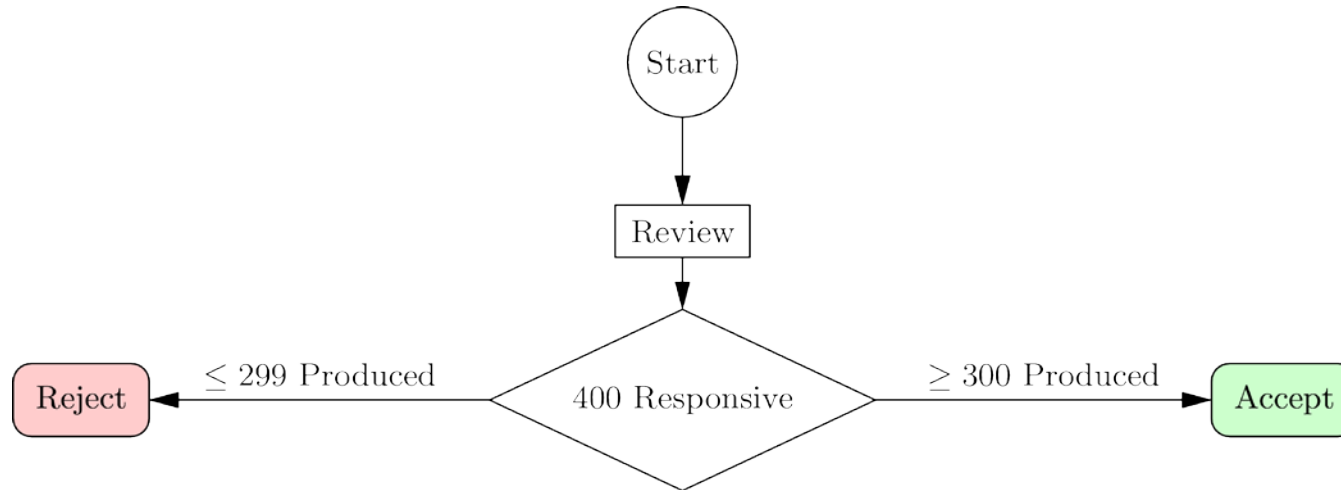
# Examples: Multi-Stage Acceptance

	Case 1	Case 2
Total Docs	100,000	100,000
Top Ranked Docs Reviewed	10,000	4,000
Relevant Docs Found	5,830	950
Docs Reviewed for Direct Recall Est.	5,800	35,000
<b>Total Review</b>	<b>15,800</b>	<b>39,000</b>
Docs Reviewed for Multi-Stage Acc.	1,250	7,530
<b>Total Review</b>	<b>11,250</b>	<b>11,530</b>

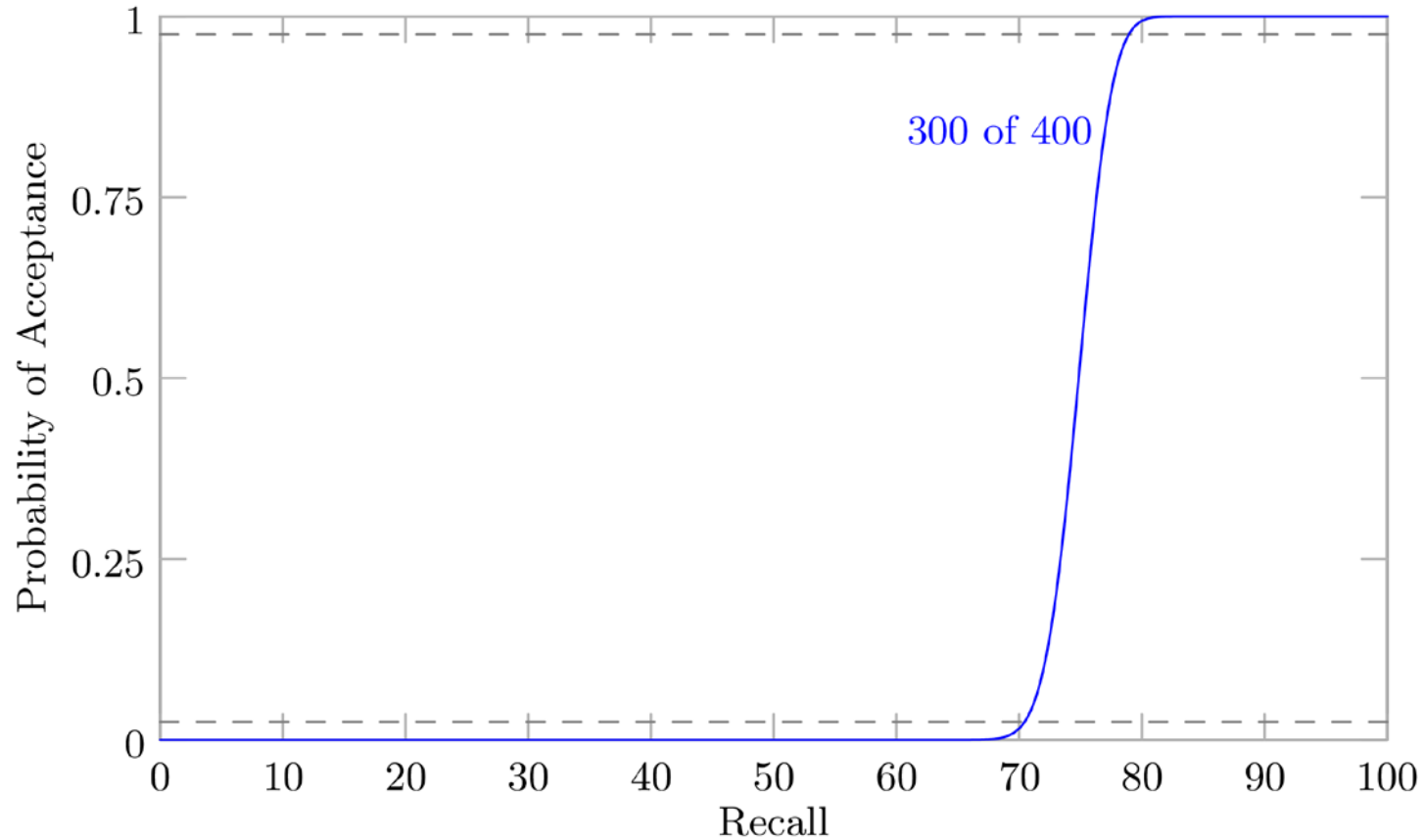
# Direct Recall Estimation

- $\rho$  = prevalence
- Review effort for recall estimate at 95% confidence:
  - $400/\rho = \pm 5\%$
  - $100/\rho = \pm 10\%$
  - $25/\rho = \pm 20\%$

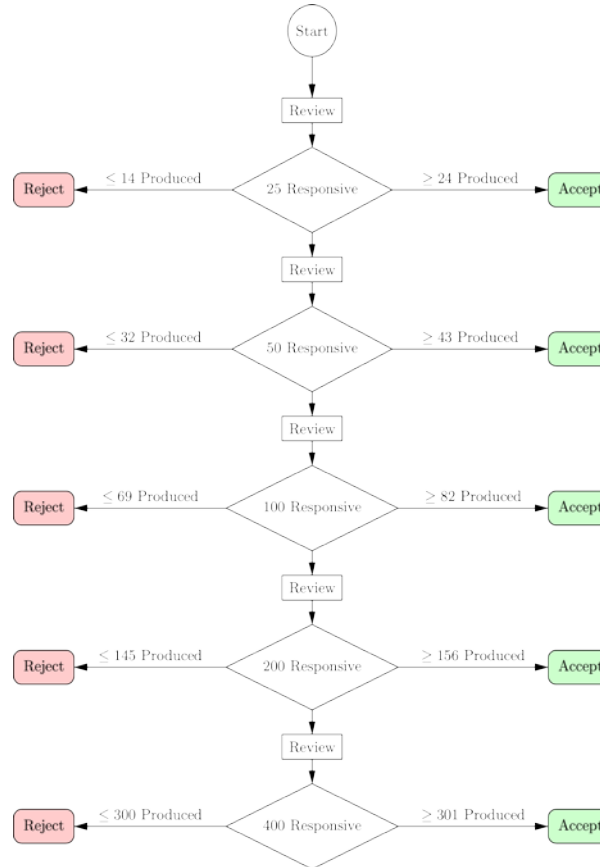
# Traditional Recall Acceptance Test



# Probability of Acceptance

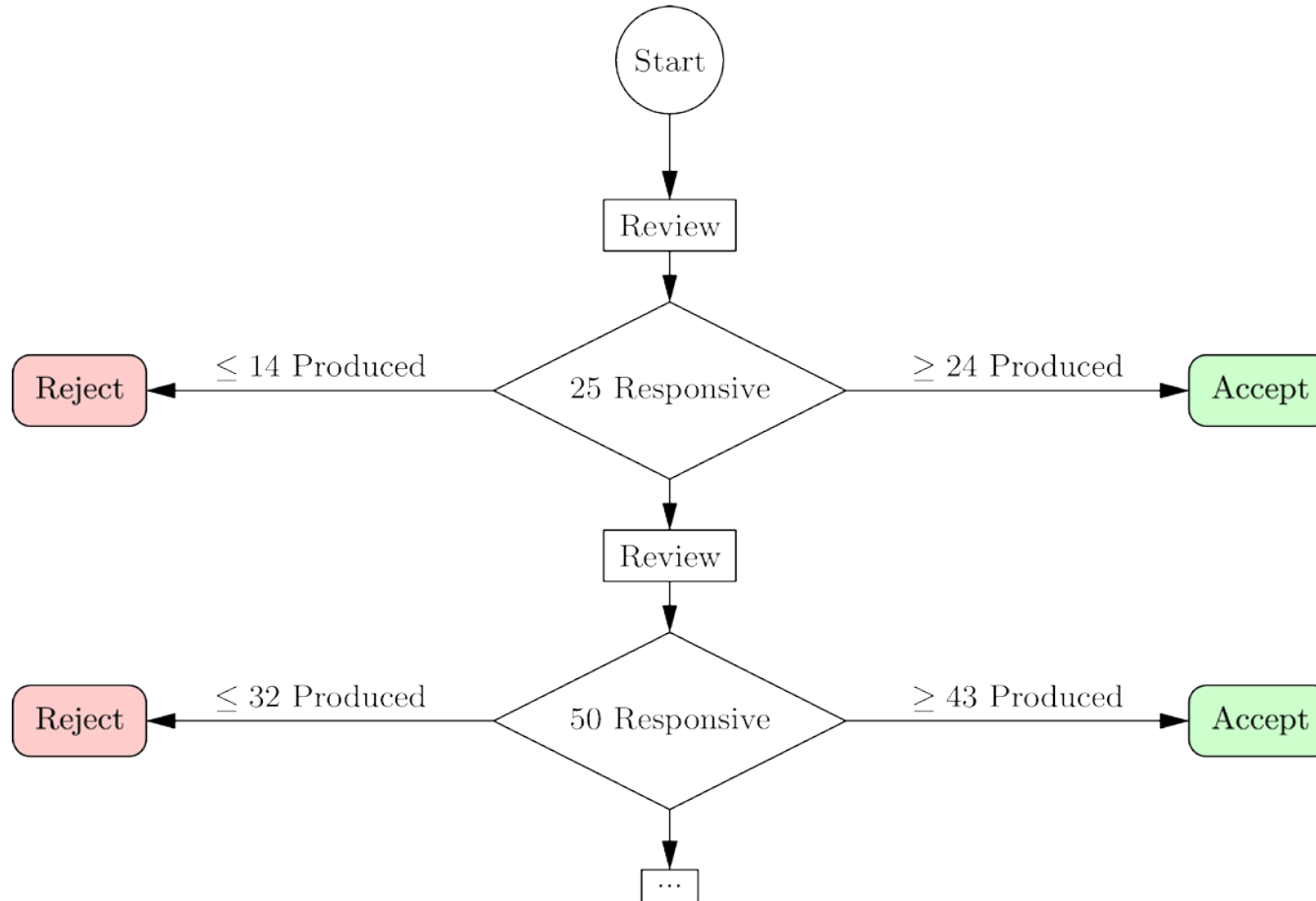


# Multi-Stage Acceptance Test

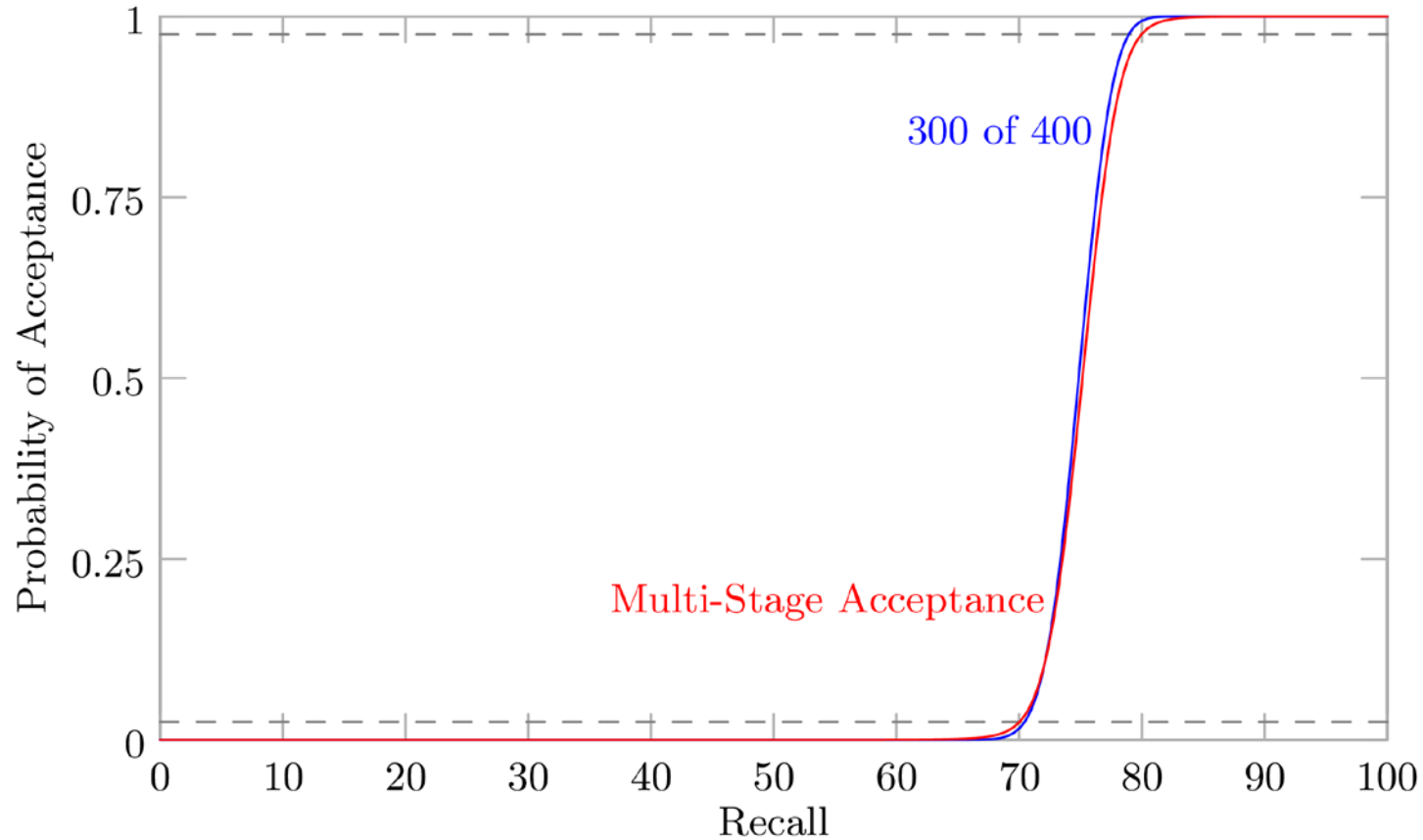




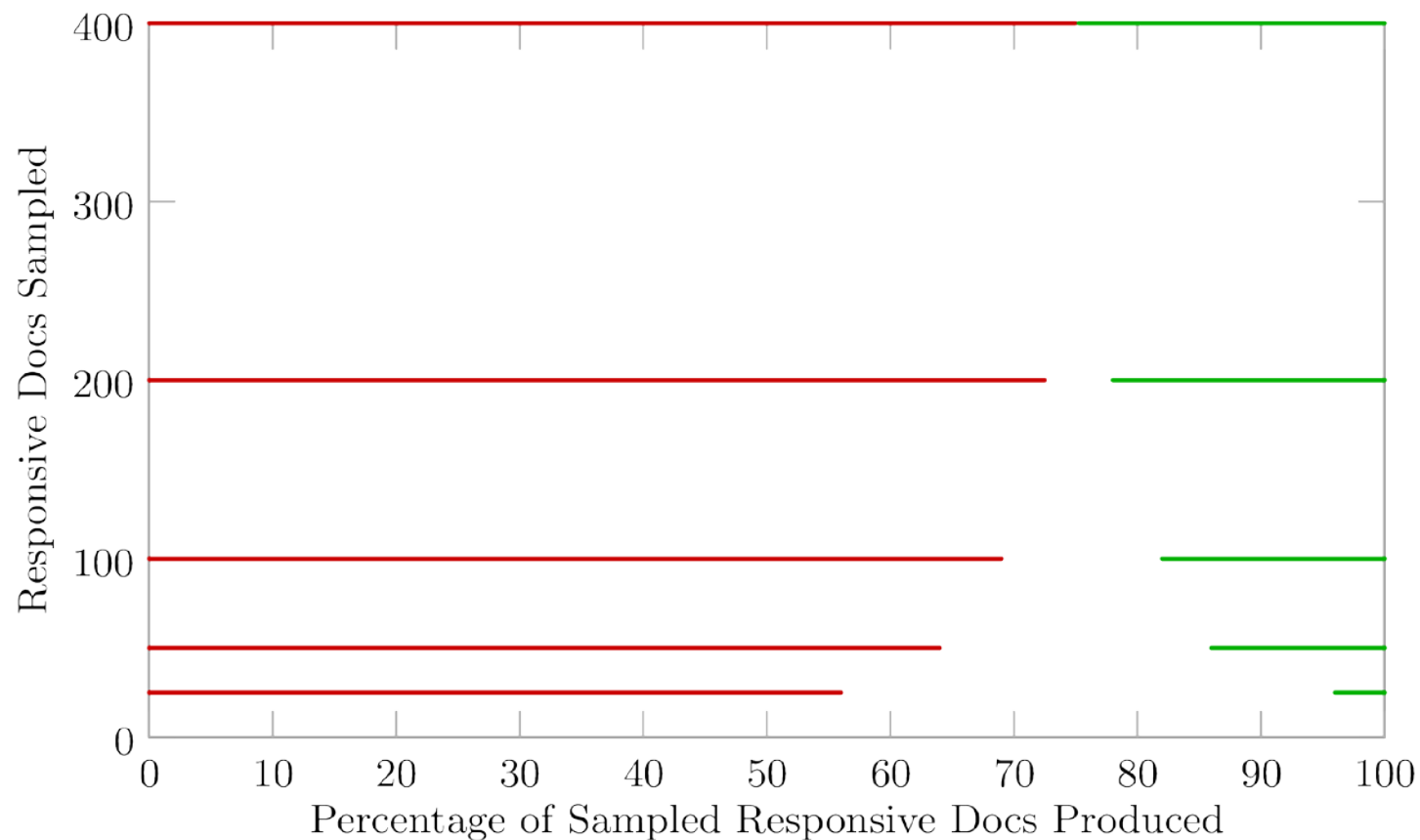
# Multi-Stage Acceptance Test



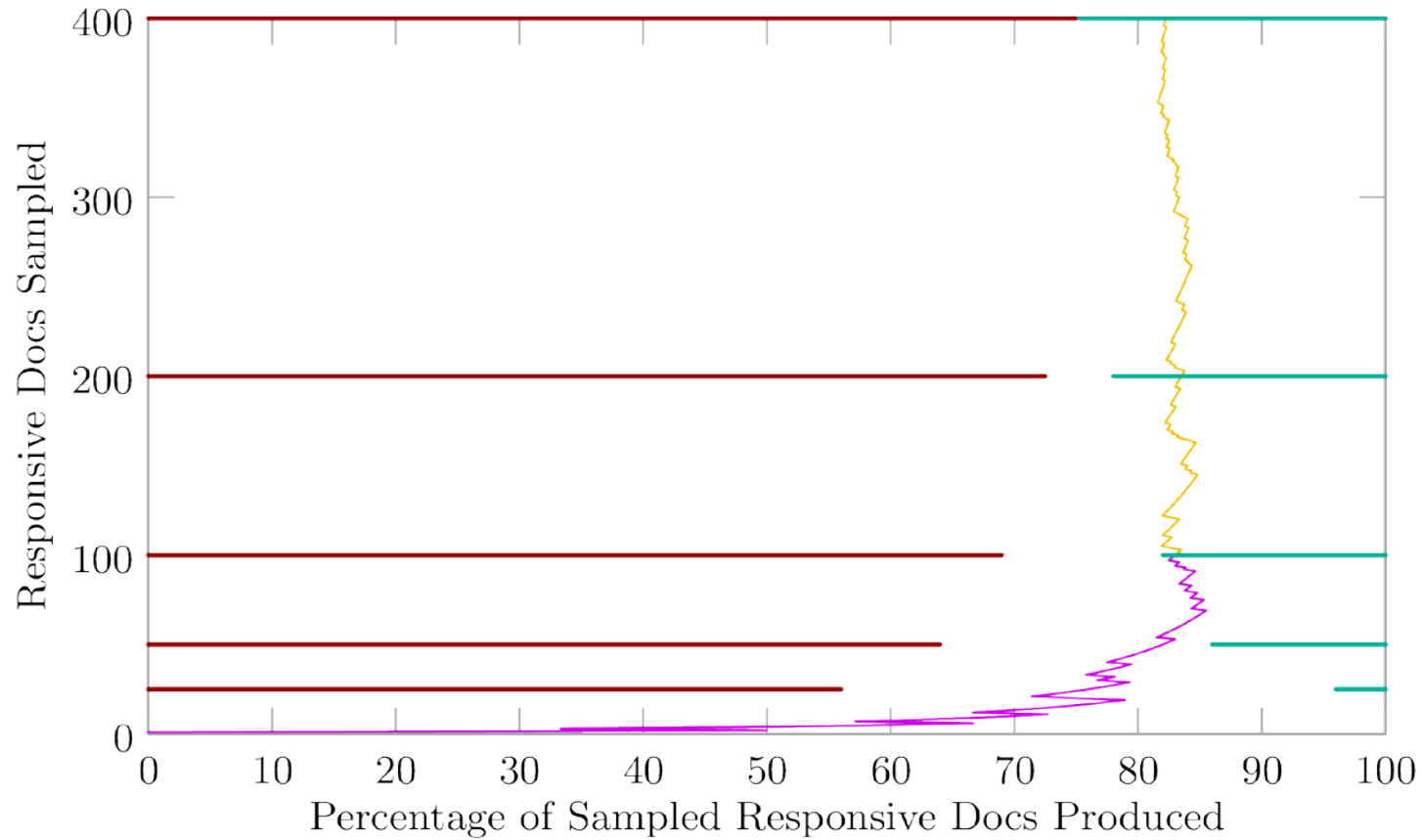
# Probability of Acceptance



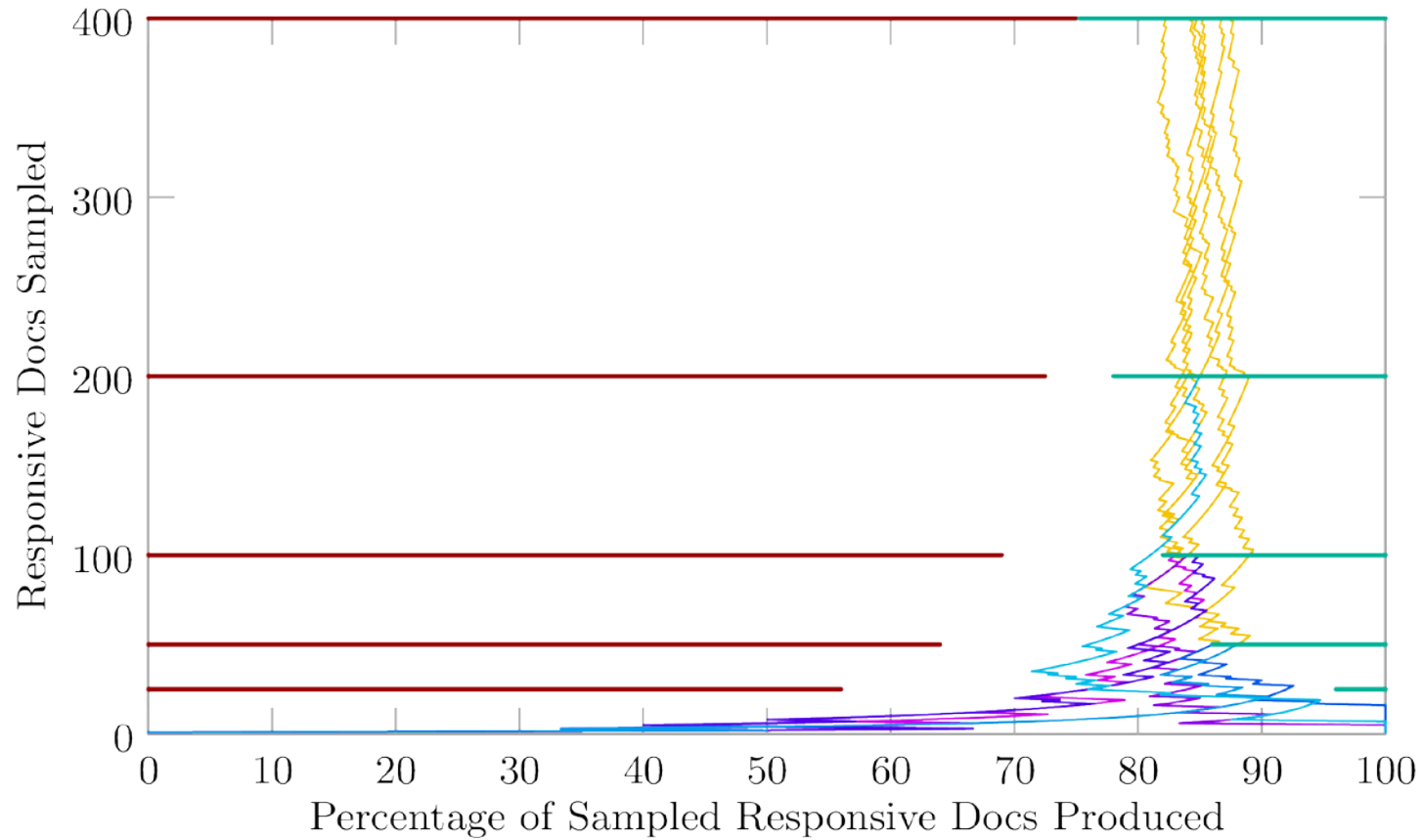
# Boundaries ( $R_s=75\%$ )



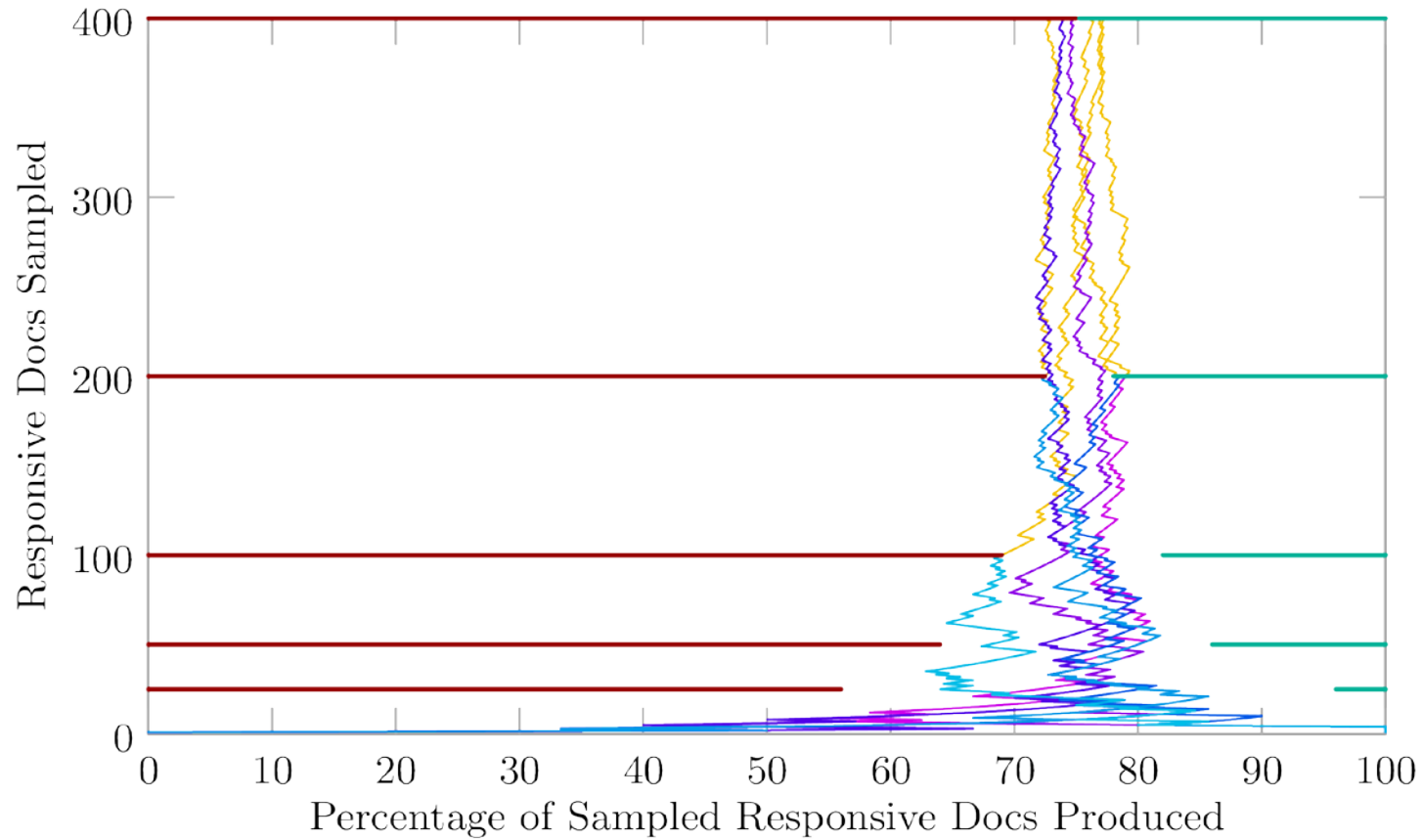
# Path with R=85%



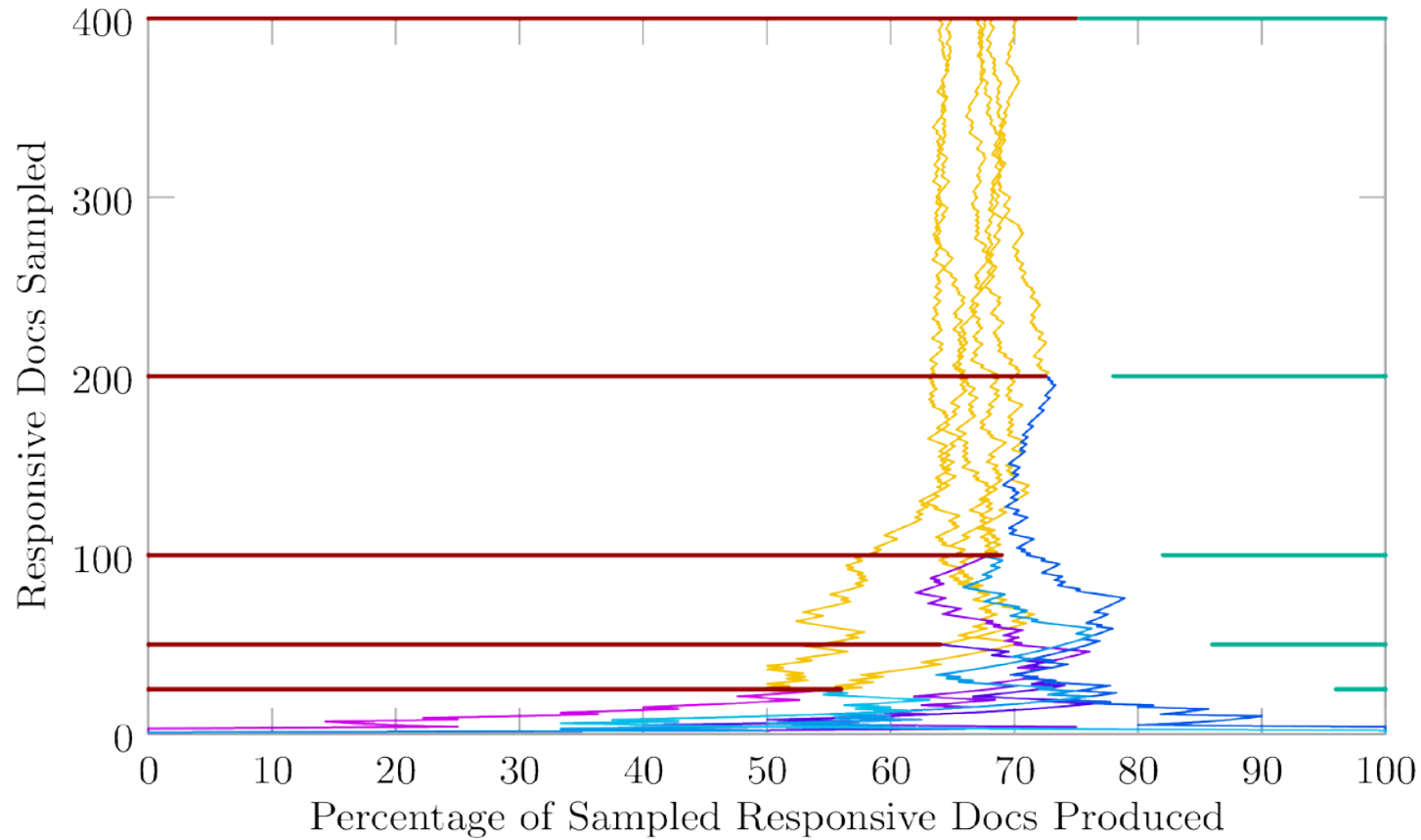
# 6 Paths with R=85%



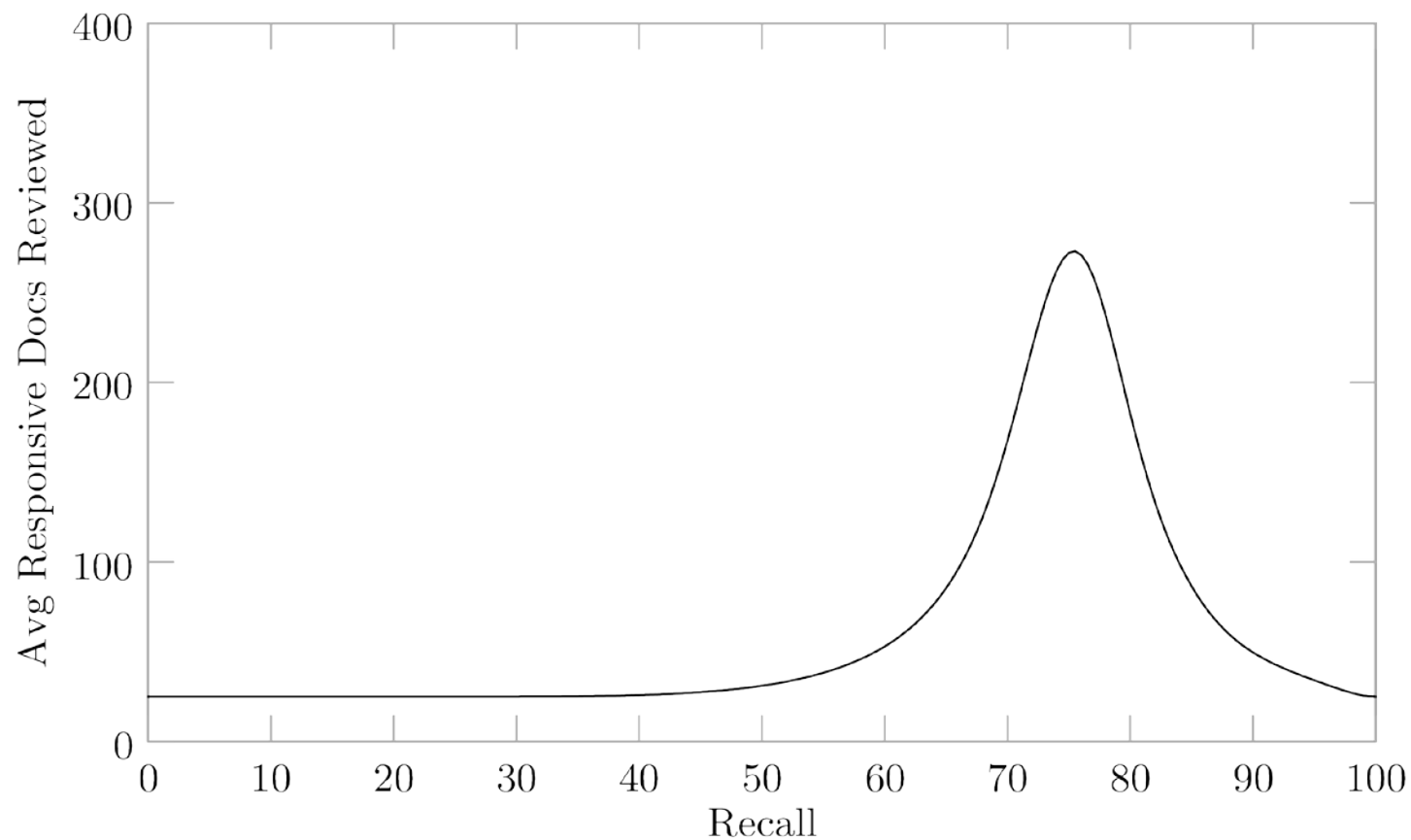
## 6 Paths with R=75%



## 6 Paths with R=65%

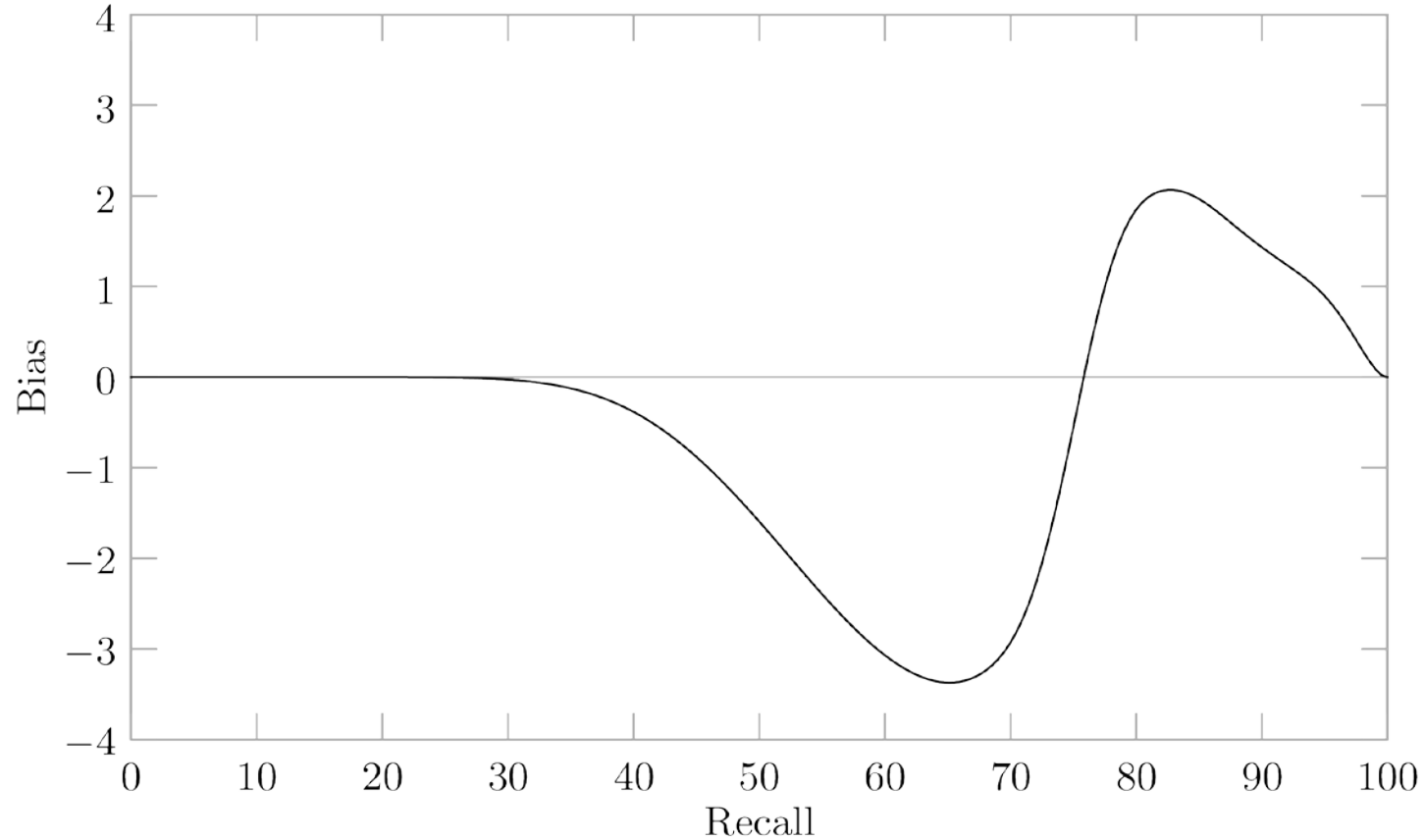


# Review Effort for Multi-Stage





# Multi-Stage is Not for Estimation



# Additional info

- Full paper provides tables for various splitting recall values.