

# Discussion of “Practical Problems in Sports Analytics”



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# Outline:

- Brief background of JQAS
- Discussion of the three papers, and their positioning in the larger JQAS context
- How JQAS works
- Statistical summaries of the JQAS manuscript review process

# JQAS background:

- First issue: April, 2005
- JQAS became an ASA journal in 2012
- Editors-in-chief:
  - Benjamin Alamar (2005-2011)
  - Jim Albert (2012-2014)
  - Mark Glickman (2015-2017)
  - Steve Rigdon (2018-2020)

# JQAS aims and scope:

The *Journal of Quantitative Analysis in Sports* (JQAS), an official journal of the American Statistical Association, publishes timely, high-quality peer-reviewed research on the quantitative aspects of professional and amateur sports, including collegiate and Olympic competition. The scope of application reflects the increasing demand for novel methods to analyze and understand data in the growing field of sports analytics. Articles come from a wide variety of sports and diverse perspectives, and address topics such as game outcome models, measurement and evaluation of player performance, tournament structure, analysis of rules and adjudication, within-game strategy, analysis of sporting technologies, and player and team ranking methods. JQAS seeks to publish manuscripts that demonstrate original ways of approaching problems, develop cutting edge methods, and apply innovative thinking to solve difficult challenges in sports contexts. JQAS brings together researchers from various disciplines, including statistics, operations research, machine learning, scientific computing, econometrics, and sports management.

# Albert (2016):

- Factors batting average into product of marginal and conditional probabilities
- Models each probability from an exchangeable prior
- Model extends easily to more complex scenarios, including situational effects
- Novel approach to framing batting averages and other probability-like statistics

# Snyder and Lopez (2015):

- Isolates “discretionary” penalties that could be influenced by referee bias
- Modeled probability of specific penalty on a pass play or run play through a GLMM
- Discovered that adjusted discretionary penalty rates vary over the time of a game
- Novel application to learning about patterns of referee judgment and consistency

# Silva and Swartz (2016):

- Motivated by 2<sup>nd</sup>-half soccer substitution rule described in a 2012 JQAS paper
- Re-examined the rule to understand its limitations with regard to team strengths
- Developed a model for scoring probabilities for the trailing team accounting for team strength
- Novel approach to critiquing existing work; resulted in a Comment and Rejoinder

# Synthesis:

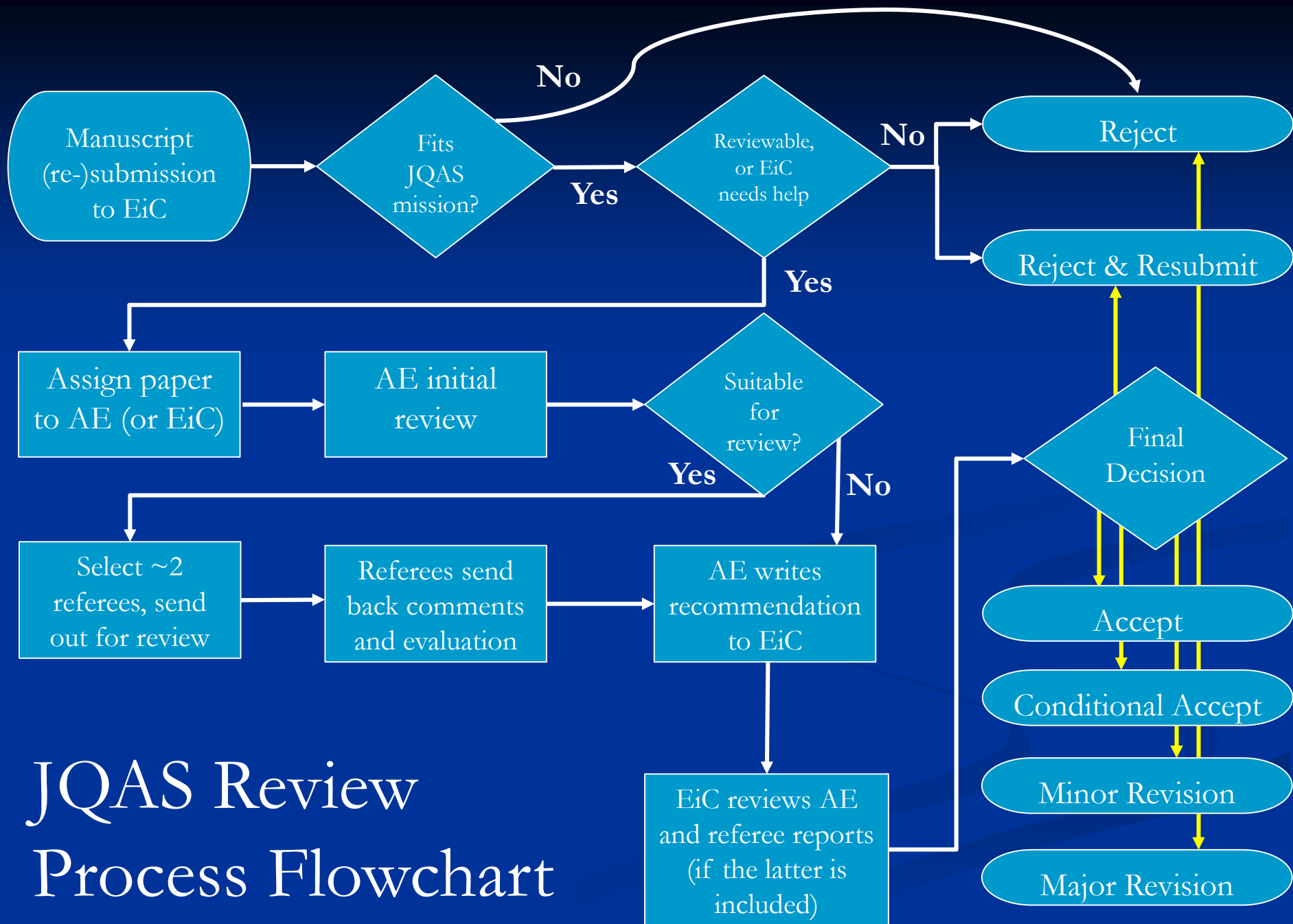
- All were well-written papers
- All three papers demonstrated novelty in their approach in addressing a practical problem
- Importantly, all the papers provided springboards for extending their ideas
- Common feature: Statistically, all three incorporated shrinkage/random effects



# What goes into papers being published in JQAS?

The remainder of this discussion concerns

- The process and flow of manuscript reviews
- Simple statistical analysis of decisions and review times for JQAS manuscripts



# JQAS Review Process Flowchart

# Analysis of JQAS manuscript review process:

Analysis includes

- All manuscript submissions from July, 2014 through June 2017
- 361 manuscript streams comprising 475 manuscripts (original submissions and revisions)

Distribution of manuscript streams by AE over three years:

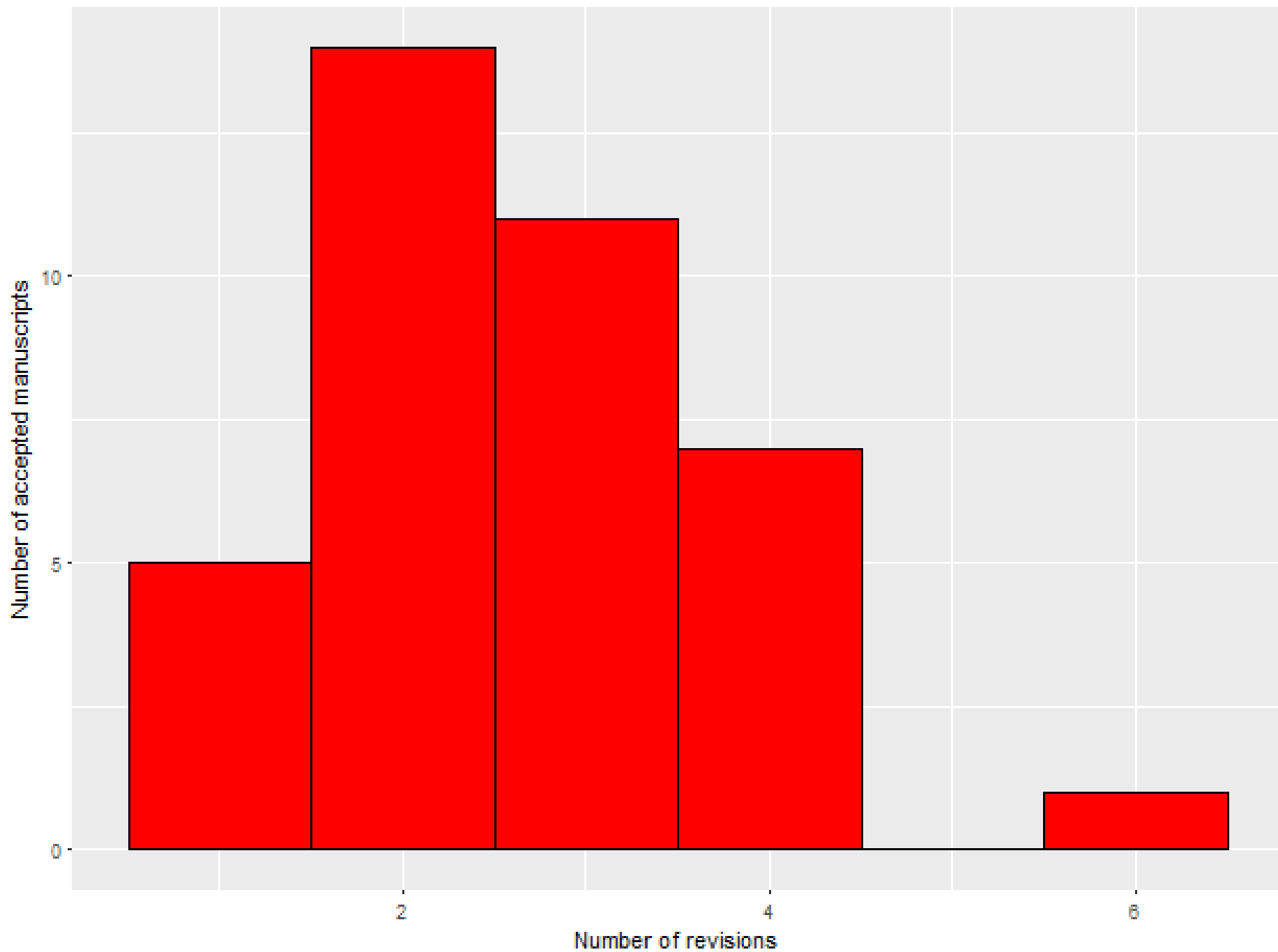
Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
1.000	2.000	4.000	4.545	6.000	16.000

# Manuscript decisions:

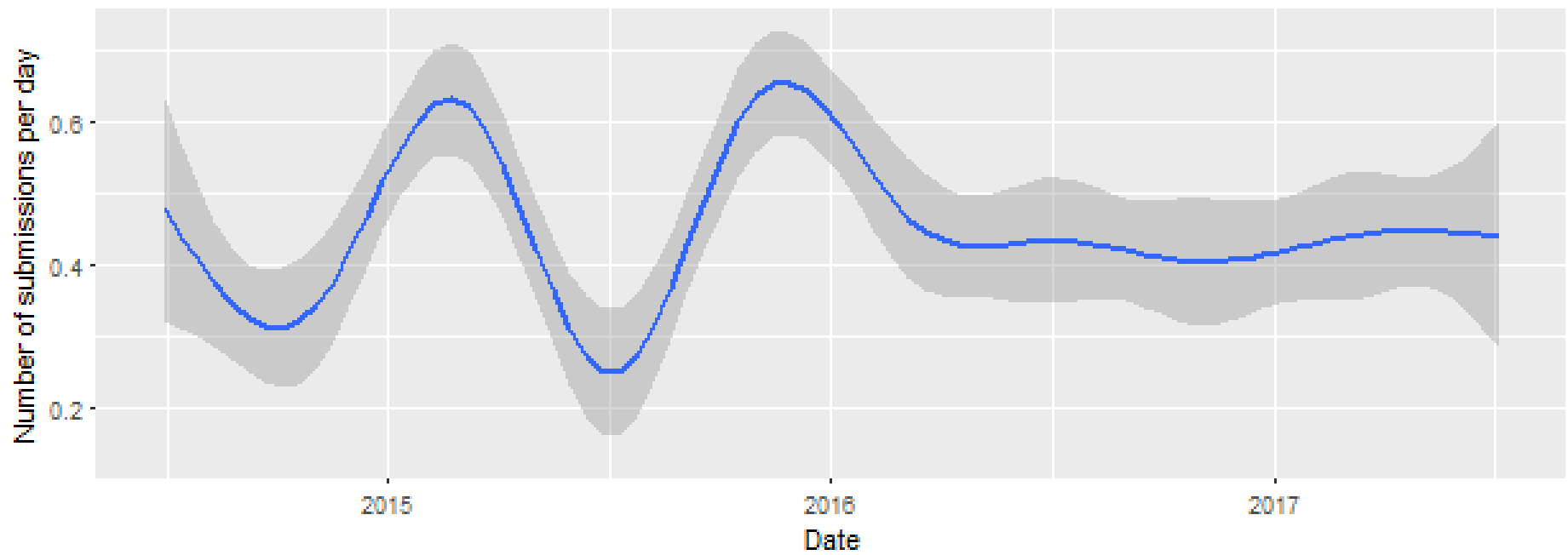
Revision	Accept	Reject	Open	Withdrawn
Original	35	289	27	5
1	35	10	7	1
2	32	2	1	1
3	19	0	1	0
4+	10	0	0	0

- Overall 10.8% acceptance rate  $\left(\frac{35}{35+289}\right)$
- Among first revisions, the acceptance rates jumps to 77.8%.

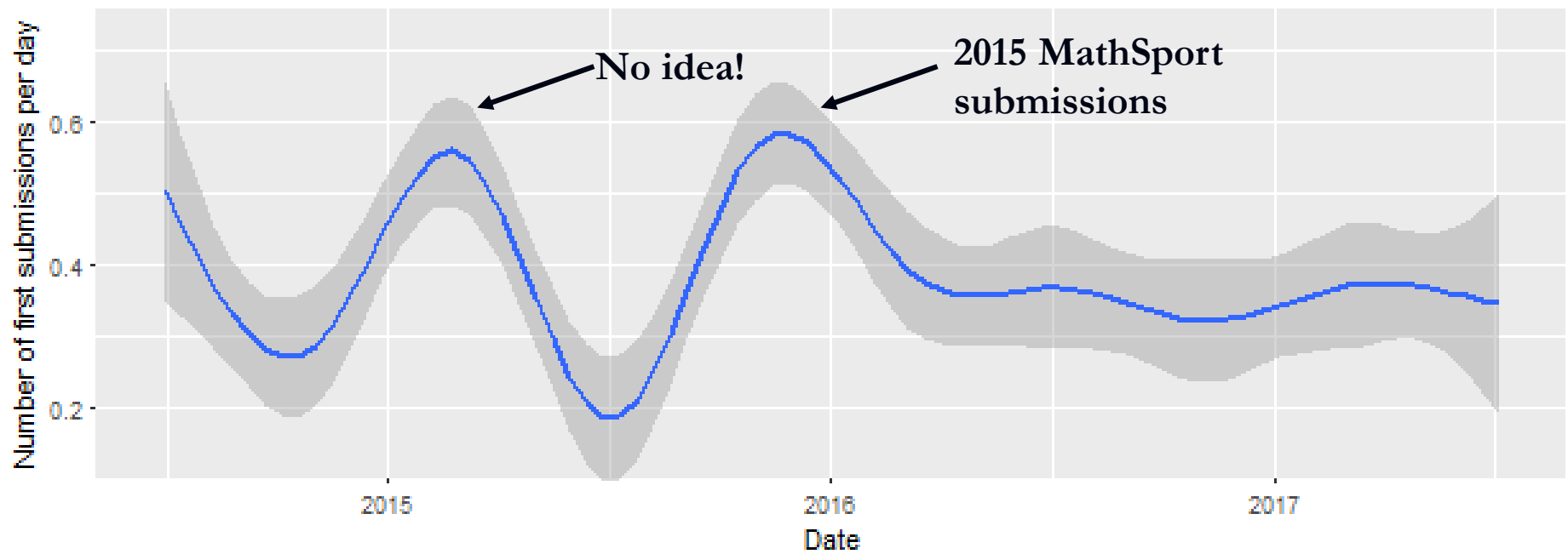
Distribution of the number of revisions among accepted manuscripts



All submissions



First submissions

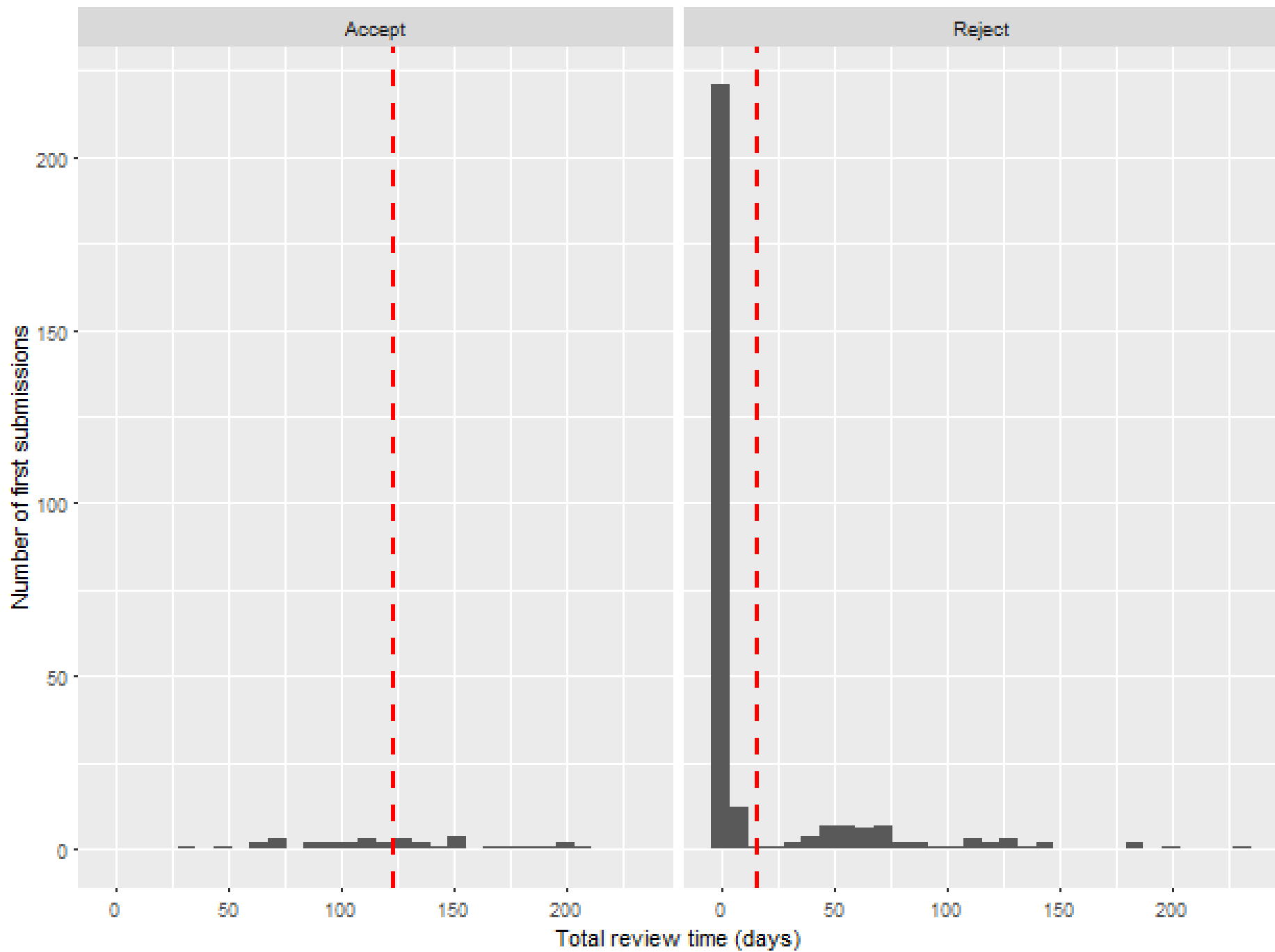


# Transition percentages:

	Reject	Reject & resubmit	Major revision	Minor revision	Conditional accept	Accept
First submission	64.86	15.43	15.43	3.71	0.57	0.00
Major revision	13.04	6.52	23.91	43.48	13.04	0.00
Minor revision	2.22	0.00	2.22	28.89	22.22	44.44
Conditional accept	0.00	0.00	0.00	0.00	0.00	100.00

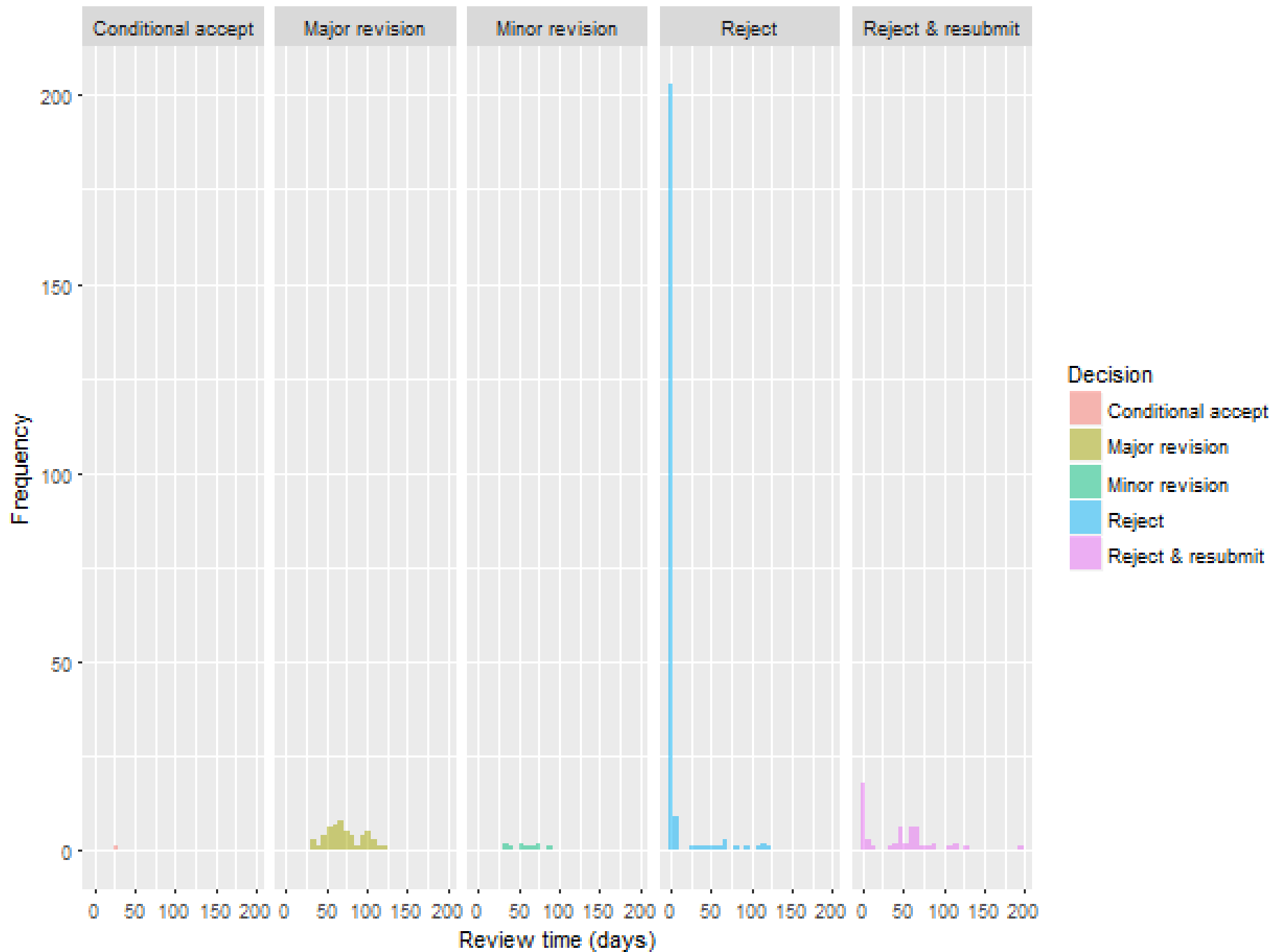
- Rejection rate plummets if not first submission
- Only 20% of major revision resubmissions are rejected
- Minor revisions are rarely (eventually) rejected

Total review time from date of first submission

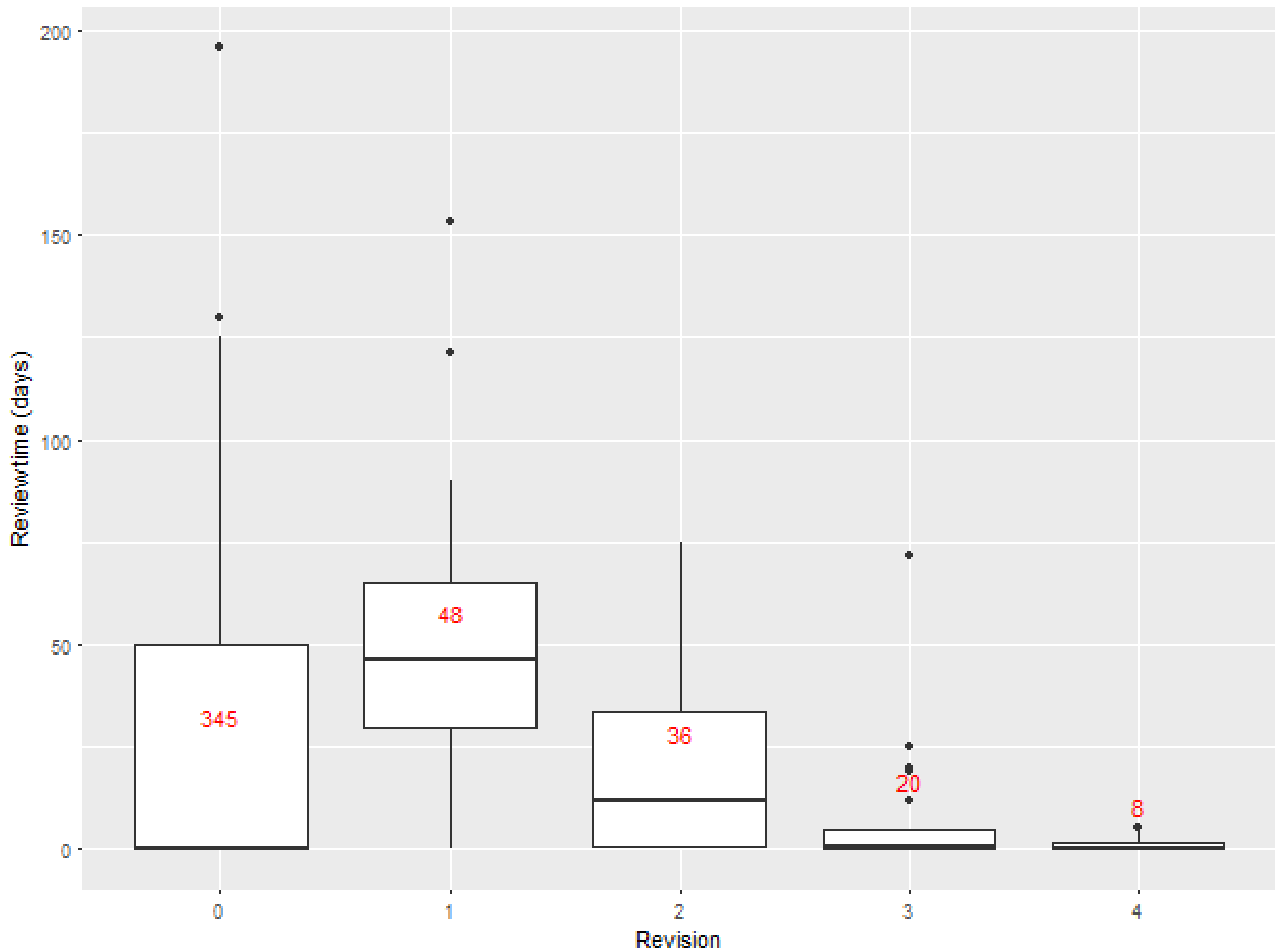




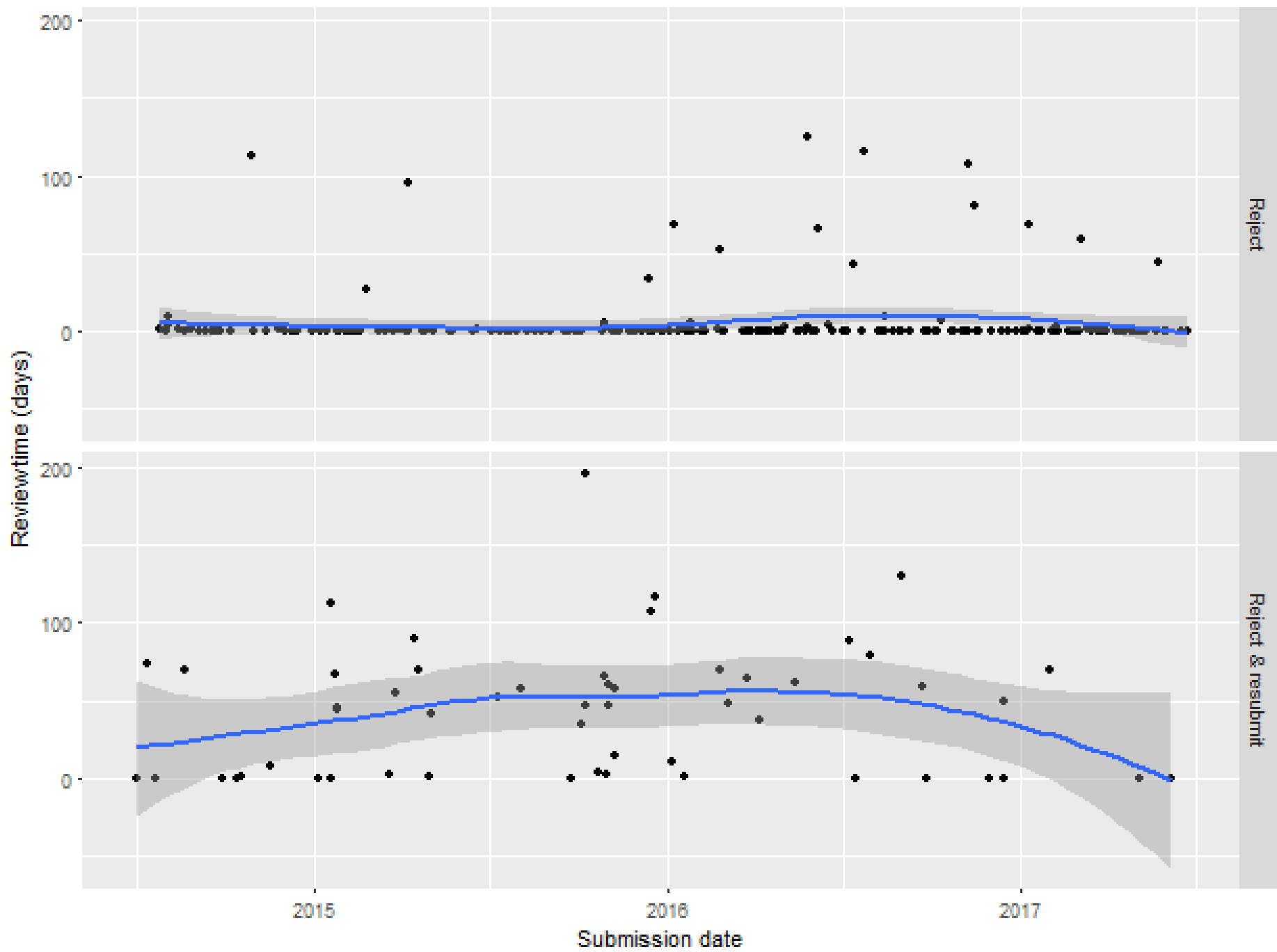
# Review time for first submissions



Review time as a function of revision



Review time for rejected first submissions



# Thanks for paying attention!



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