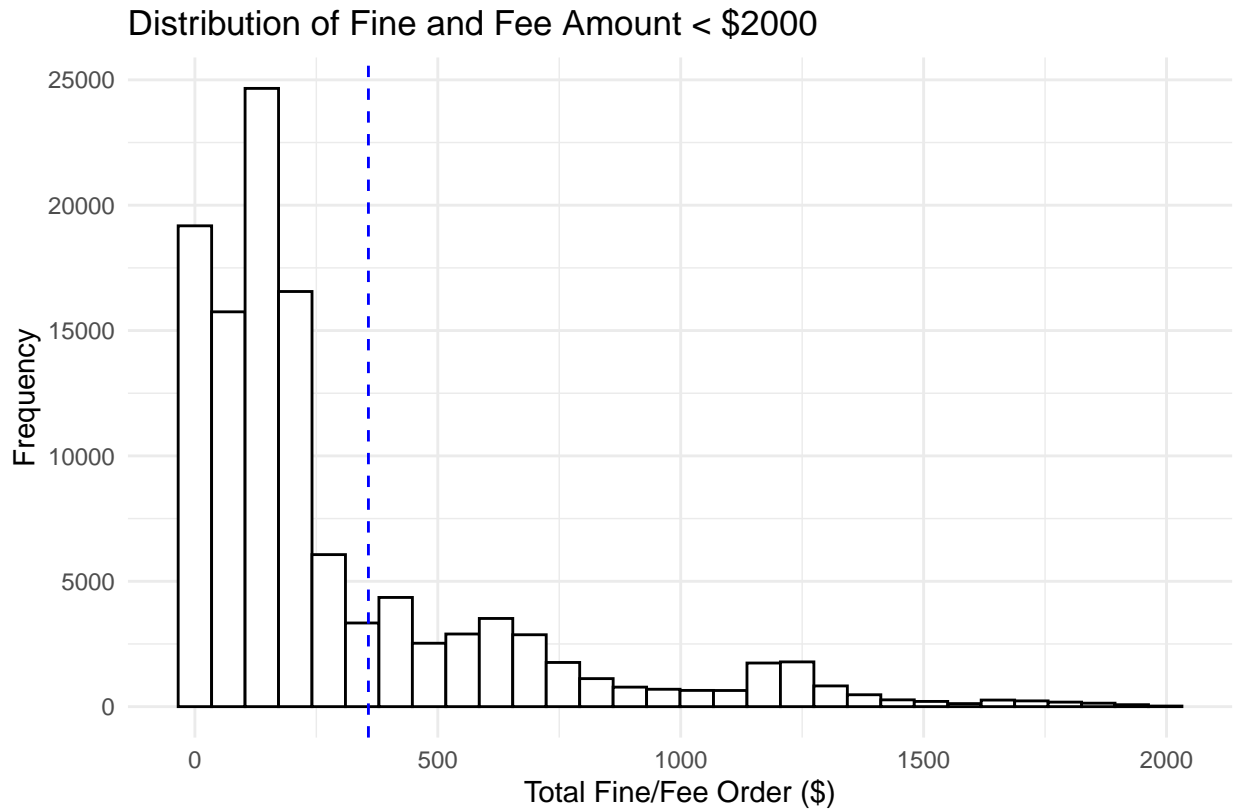# ASR Replication Preliminary - Felony

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This analysis represents a preliminary attempt to replicate and extend the Harris et. al. ASR paper. The Minnesota data is situated at the case level from 2010-2015. The full data series extends back to 2004, but VIBES data in the two most populous MN counties, Hennepin and Ramsey, are missing and inconsistent until 2010. Additionally, while data at the conviction level would be more comparable, we do not have data at the conviction level for much of the VIBES data. This analysis uses the felony only data which more closely reflects the ASR paper's use of Washington Superior Court data. We also include an extention set of mixed models to Native American populations, with hypothesized interactions with alcohol-related and hunting and fisheries violations to examine if the courtesty stigma and steretype congruence effects found in the Black and Latino models extend to Native American populations.

Distribution of Fines and Fees

Distribution of Fine and Fee Amount < $2000

Note: Adjusted to Jan. 2018 dollars

Descriptive Statistics

Table 1: Descriptive Statistics - Felony Data

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Total Fine/Fee	114,632	357.189	3,212.063	0.000	82.680	383.680	356,515.000
Severity (Conv.)	98,033	3.923	2.166	1.000	2.000	5.000	12.000
Crim. Hist. Pts.	98,033	2.020	2.034	0.000	0.000	3.000	6.000
Age	119,845	32.375	10.811	15	24	39	95
Male	118,928	0.804	0.397	0.000	1.000	1.000	1.000
White	114,281	0.578	0.494	0.000	0.000	1.000	1.000
Asian	114,281	0.027	0.161	0.000	0.000	0.000	1.000
Black	114,281	0.245	0.430	0.000	0.000	0.000	1.000
Hispanic	114,281	0.056	0.230	0.000	0.000	0.000	1.000
Native Am.	114,281	0.079	0.270	0.000	0.000	0.000	1.000
Other Race	114,281	0.015	0.122	0.000	0.000	0.000	1.000
Trial	119,845	0.001	0.029	0	0	0	1
Petty Misdemeanor	119,845	0.002	0.039	0	0	0	1
Misdemeanor	119,845	0.036	0.186	0	0	0	1
Gross Misdemeanor	119,845	0.030	0.171	0	0	0	1
Violent	119,845	0.336	0.472	0	0	1	1
Alcohol/DUI	119,845	0.063	0.243	0	0	0	1
Drug	119,845	0.325	0.468	0	0	1	1
Hunt/Fish	119,845	0.0002	0.014	0	0	0	1
Percent Minority	119,845	10.965	6.677	1.348	6.242	17.624	50.801
Percent Vote Republican	119,845	43.607	8.787	31.633	35.716	50.392	58.858
Percent Law and Justice	119,845	15.714	3.139	8.467	13.370	18.393	22.683

Bivariate Correlations

Table 2: Pairwise Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Total Fine/Fee (log)	1												
Severity (Conv.)	0.03	1											
Crim. Hist. Pts.	-0.02	-0.02	1										
Age	0	0.01	0.18	1									
Male	0	0.13	0.18	-0.01	1								
White	0.02	-0.08	-0.08	0.09	-0.06	1							
Asian	-0.01	-0.01	-0.02	-0.04	0.02	-0.19	1						
Black	-0.02	0.09	0.11	-0.04	0.1	-0.67	-0.09	1					
Hispanic	0	0.06	-0.03	-0.04	0.03	-0.29	-0.04	-0.14	1				
Native Am.	0	-0.03	0.02	-0.03	-0.08	-0.34	-0.05	-0.17	-0.07	1			
Other Race	0	0.01	-0.01	-0.02	0	-0.14	-0.02	-0.07	-0.03	-0.04	1		
Trial	0	0.04	0.01	0.01	0.01	-0.02	0	0.03	0	0	0	1	
Petty Misdemeanor	0	-0.01	-0.01	0	0	0.02	0	-0.02	0	0	0	0	1
Misdemeanor	0.01	-0.07	-0.05	-0.02	0	0.05	-0.01	-0.06	0.01	0.01	0	0	0.05
Gross Misdemeanor	0.01	-0.06	-0.02	0.02	0	0.03	-0.01	-0.04	0	0.02	-0.01	0	0.02
Violent	-0.01	0.35	-0.02	-0.06	0.19	-0.11	-0.02	0.12	0.02	0.01	0.01	0.01	-0.02
Alcohol.DUI	0.01	0.15	-0.04	0.07	0.01	0.06	-0.01	-0.07	0	0	-0.01	0	0.01
Drug	0.01	-0.1	-0.03	-0.01	-0.11	0.11	0	-0.11	0	-0.01	-0.01	-0.01	0.04
Hunt.Fish	0	-0.01	-0.01	0	0.01	0.01	0	-0.01	0	0	0	0	0.08
Percent Minority	-0.02	0.06	0.05	0	0.03	-0.36	0.07	0.33	-0.02	0.1	0.03	0.03	-0.02
Percent Vote Republican	0.02	-0.07	-0.04	-0.01	-0.05	0.28	-0.07	-0.3	0.02	0.01	-0.02	-0.03	0.02
Percent Law and Justice	-0.01	-0.03	0.02	0	0.01	0.05	0.01	-0.06	-0.01	0.01	-0.01	-0.02	0.01

Table 3 Replication

The table below presents a replication of Table 3 in Harris et. al. 2011 with data using only felony offenses. A few differences are of note: "SRA score" and "offender score", or comparable measures, are not redily available in the MCAO data. We include a criminal history score and severity score from the Minnesota Sentencing Guidelines Commission data, which judges will use in sentencing in MN. We run each of the models on a subset of cases consisting of all felony cases, as to make a closer comparison to the superior court data in Washington. Question: In the ASR paper, there are two offense type binary measures which are described as the following: "Drug Offense is a dummy equal to 1 for drug offenses, Other Offense is a dummy equal to 1 for nondrug offenses". What is the referent in the ASR model?

Table 3: Harris et. al. ASR Table 3 Replication - MCAO Felony Data

| | Total Fine and Fee Order (log) | | | |
	(1)	(2)	(3)	(4)
Severity Score (Conv.)		0.013***	−0.002	−0.002
Crim. Hist. Pts.		−0.116***	−0.119***	−0.119***
Black		−0.164***	−0.143***	−0.143***
Hispanic		−0.162***	−0.147***	−0.147***
Asian		−0.049	−0.034	−0.034
Native Am.		−0.185***	−0.157***	−0.156***
Other Race, Ln Age		0.005	0.030	0.031
Male			0.118***	0.118***
Trial			0.079***	0.079***
Petty Misdemeanor			−0.0004	−0.0004
Misdemeanor			0.941***	0.941***
Gross Misdemeanor			−0.041	−0.040
Drug			0.096**	0.096**
Alcohol/DUI			0.112**	0.112**
Hunt/Fish			0.082***	0.082***
Violent			0.449***	0.449***
Percent Minority			0.259	0.256
Percent Vote Republican			0.074***	0.074***
Percent Law and Justice				−0.006
repubvote				0.004
lecperc				−0.042
Constant	5.334***	5.580***	5.172***	5.632***
L1 Variance	3.14	2.84	2.82	2.82
L2 Variance	0.49	0.49	0.49	0.47
Level 1 N	114632	91028	90584	90584
Level 2 N	87	87	87	87
N	114,632	91,028	90,584	90,584

*p < .05; **p < .01; ***p < .001

Table 4: Harris et. al. ASR Table 4 Replication - MCAO Felony Data

	Total Fine and Fee Order (log)			
	(1)	(2)	(3)	(4)
Severity Score (Conv.)	0.014***	0.014***	0.013***	0.013***
Crim. Hist. Pts.	−0.123***	−0.123***	−0.123***	−0.123***
Ln Age	0.113***	0.113***	0.115***	0.116***
Male	0.131***	0.131***	0.135***	0.137***
Black	−0.125***	−0.116***	−0.180***	−0.133***
Trial	0.910***	0.910***	0.900***	0.888***
Petty Misdemeanor	−0.059	−0.059	−0.066	−0.087
Misdemeanor	0.266***	0.266***	0.266***	0.270***
Gross Misdemeanor	0.338***	0.338***	0.337***	0.341***
Violent	−0.025*	−0.025*	−0.061***	−0.167***
Percent Black	−0.123**	−0.123**	−0.123**	−0.133***
Percent Vote Republican	−0.005	−0.005	−0.005	−0.006
Percent Law and Justice	−0.029	−0.029	−0.029	−0.029
Black*Percent Black		−0.001		
Black*Violent			0.129***	
Violent*Percent Black				0.025***
Constant	5.914***	5.915***	5.924***	5.976***
L1 Variance	2.83	2.83	2.83	2.82
L2 Variance	0.41	0.41	0.41	0.41
Level 1 N	90606	90606	90606	90606
Level 2 N	87	87	87	87
N	90,606	90,606	90,606	90,606

*$p < .05$; **$p < .01$; ***$p < .001$

Table 5: Harris et. al. ASR Table 5 Replication - MCAO Felony Data

	Total Fine and Fee Order (log)			
	(1)	(2)	(3)	(4)
Severity Score (Conv.)	0.012***	0.012***	0.012***	0.012***
Crim. Hist. Pts.	−0.125***	−0.125***	−0.125***	−0.125***
Ln Age	0.125***	0.125***	0.125***	0.126***
Male	0.125***	0.125***	0.125***	0.127***
Hispanic	−0.099***	−0.023	−0.107***	−0.099***
Trial	0.901***	0.902***	0.901***	0.900***
Petty Misdemeanor	−0.068	−0.066	−0.068	−0.068
Misdemeanor	0.264***	0.263***	0.264***	0.262***
Gross Misdemeanor	0.340***	0.340***	0.340***	0.339***
Drug	0.037**	0.037**	0.035**	0.105***
Percent Hispanic	0.002	0.005	0.002	0.007
Percent Vote Republican	0.007	0.007	0.007	0.007
Percent Law and Justice	−0.046*	−0.047*	−0.046*	−0.046*
Hispanic*Percent Hispanic		−0.012		
Hispanic*Drug			0.030	
Drug*Percent Hispanic				−0.014***
Constant	5.324***	5.316***	5.324***	5.296***
L1 Variance	2.83	2.83	2.83	2.83
L2 Variance	0.47	0.47	0.47	0.47
Level 1 N	90606	90606	90606	90606
Level 2 N	87	87	87	87
N	90,606	90,606	90,606	90,606

*p < .05; **p < .01; ***p < .001

Table 6: Native American Interactions - MCAO Felony Data

	Total Fine and Fee Order (log)			
	(1)	(2)	(3)	(4)
Severity Score (Conv.)	0.001	0.001	0.001	0.001
Crim. Hist. Pts.	−0.123***	−0.123***	−0.123***	−0.123***
Ln Age	0.096***	0.095***	0.095***	0.096***
Male	0.115***	0.115***	0.115***	0.115***
Native Am.	−0.120***	−0.098***	−0.102***	−0.120***
Trial	0.923***	0.923***	0.923***	0.923***
Petty Misdemeanor	−0.005	−0.006	−0.002	−0.005
Misdemeanor	0.128***	0.128***	0.129***	0.129***
Gross Misdemeanor	0.139***	0.140***	0.142***	0.142***
Alcohol.DUI	0.410***	0.410***	0.432***	0.432***
Percent NA	0.013	0.016	0.013	0.014
Percent Vote Republican	0.009	0.009	0.009	0.009
Percent Law and Justice	−0.048*	−0.048*	−0.048*	−0.048*
Native Am.*Percent NA		−0.006		
Native Am.*Alcohol.DUI			−0.271***	
Native Am.*Hunt/Fish			−1.189	
Alcohol.DUI*Percent NA				−0.013*
Hunt/Fish*Percent NA				−0.036
Constant	5.391***	5.380***	5.391***	5.391***
L1 Variance	2.82	2.82	2.82	2.82
L2 Variance	0.47	0.47	0.47	0.47
Level 1 N	90606	90606	90606	90606
Level 2 N	87	87	87	87
N	90,606	90,606	90,606	90,606

*p < .05; **p < .01; ***p < .001