Lesson 10

Thursday February 29, 2024

Comparing Self-Reported Delinquency to Arrests

TABLE B-25 Estimation of Probability of Arrest per Crime (q) from Data on Offenders and Arrestees in National Youth Survey

Number of Self-Reported Offenses in 1976 and 1978	Midpoint Number of Offenses	Number of Offenders[a]	Fraction Arrested[a]	Probability of Arrest per Crime (q)[b]	Standard Deviation of q Estimate[c]
1-2	1.5	149	.0067	.004479	.004467
3-5	4	151	.0199	.005004	.002871
6-10	8	181	.0110	.001388	.000978
11-20	15	207	.0290	.001959	.000793
21-50	35	233	.0300	.000871	.000327
51-100	75	131	.0382	.000519	.000230
101-200	150	109	.0734	.000508	.000176
201+	250	90	.1889	.000837	.000193

[a] Dunford and Elliott (1984:Table 7).

[b] If q is the probability of arrest per crime and $p = 1 - q$ is the probability of not being arrested for a crime, then the probability of no arrests for persons committing n crimes is p^n and the fraction ever arrested is just $1 - p^n$. The midpoint value for the range of crimes committed is used for n to estimate q. The results, however, are roughly comparable within the entire range. For the 11-20 group, for example, $q = .002670$ for $n = 11$ and $q = .001470$ for $n = 20$, compared with the midpoint value of $q = .001959$ for $n = 15$.

[c] The standard deviation for the estimate of q is estimated from:

Source: Blumstein, Alfred, Jacqueline Cohen, Jeffrey A. Roth, and Christy A. Visher (editors) (1986). Criminal careers and "career criminals." (Volume 1). Washington, DC: National Academy Press.

Pathways to Desistance Self-Reported Offending Data

Number of Self-Reported Offenses in Prebaseline Year

Male Distributions					*Female Distributions*				
	Philadelphia (n = 600, missing 5)		*Phoenix (n = 561, missing 4)*			*Philadelphia (n = 94, missing 1)*		*Phoenix (n = 88, missing 1)*	
No. of Offenses	n	%	n	%	*No. of Offenses*	n	%	n	%
0	63	10.5	31	5.5	0	13	13.8	8	9.1
1	38	6.3	41	7.3	1	6	6.4	6	6.8
2	32	5.3	28	5.0	2	8	8.5	10	11.4
3	35	5.8	32	5.7	3	9	9.6	6	6.8
4	22	3.7	20	3.6	4	8	8.5	3	3.4
5	21	3.5	26	4.6	5	7	7.5	3	3.4
6	15	2.5	13	2.3	6	6	6.4	2	2.3
7	13	2.2	15	2.7	7	2	2.1	1	1.1
8	15	2.5	14	2.5	8	0	0.0	1	1.1
9	10	1.7	12	2.1	9	5	5.3	1	1.1
10 to 14	41	6.8	29	5.2	10 to 14	5	5.3	6	6.8
15 to 19	25	4.2	32	5.7	15 to 19	4	4.3	2	2.3
20 to 29	22	3.7	32	5.7	20 to 29	4	4.3	10	11.4
30 to 39	19	3.2	32	5.7	30 to 39	4	4.3	4	4.6
40 to 49	12	2.0	21	3.7	40 to 49	1	1.1	1	1.1
50 to 74	24	4.0	27	4.8	50+	12	12.8	24	27.8
75 to 99	17	2.8	20	3.6					
100 to 199	32	5.3	50	8.9					
200 to 299	20	3.3	26	4.6					
300 to 399	22	3.7	15	2.7					
400 to 499	15	2.5	9	1.6					
500 to 749	31	5.2	12	2.1					
750 to 999	13	2.2	5	0.9					
1000+	43	7.2	19	3.4					

NOTE: Percentages may not total 100 due to rounding.

Pathways to Desistance Official Record (OR) Data

Number of Arrests Resulting in Referral in Prebaseline Year

Male Distributions					*Female Distributions*				
	Philadelphia (n = 605)		*Phoenix (n = 565)*			*Philadelphia (n = 95)*		*Phoenix (n = 89)*	
No. of Priors	n	%	n	%	*No. of Priors*	n	%	n	%
0	300	49.6	291	51.5	0	58	61.1	49	55.1
1	172	28.4	115	20.4	1	27	28.4	26	29.2
2	84	13.9	72	12.7	2	9	9.5	7	7.9
3	30	5.0	43	7.6	3	0	0.0	5	5.6
4	15	2.5	24	4.3	4	0	0.0	2	2.3
5	2	0.3	9	1.6	5	1	1.1	0	0.0
6	1	0.2	5	0.9					
7	1	0.2	3	0.5					
8	0	0.0	2	0.4					
9	0	0.0	1	0.2					

Connecting OR and SRO - Pathways Data

Arrest Activity After Conditioning on Self-Reported Offending Frequency Deciles
(N = 1,354 – 11, Missing Cases = 1,343)

	Philadelphia and Phoenix Combined							
Self-Reported Offending Decile	n	*Self-Reported Offense Range*	*Median No. of Offenses*	*Mean No. of Arrests*	*% Arrested at Least Once*	*Lower 95% Bound*	*Upper 95% Bound*	*Mean Probability of Arrest per Offense*
D_1	115	0	0.0	0.461	33.0	24.3	41.8	—
D_2	169	1 to 2	1.0	0.438	29.6	22.6	36.5	.3313
D_3	135	3 to 4	3.0	0.674	40.0	31.6	48.4	.2025
D_4	124	5 to 7	6.0	0.927	50.0	41.1	58.9	.1656
D_5	119	8 to 13	10.0	0.815	44.5	35.5	53.6	.0812
D_6	141	14 to 27	18.0	0.943	53.9	45.6	62.2	.0522
D_7	138	28 to 61	39.5	1.196	63.0	54.9	71.2	.0306
D_8	134	62 to 165	98.0	1.284	60.4	52.1	68.8	.0138
D_9	134	166 to 462	282.5	1.179	51.5	42.9	60.1	.0043
D_{10}	134	469 to 3,493	1,002.5	1.254	61.9	53.6	70.3	.0014

NOTE: Lower 95% and Upper 95% bounds provide the 95% Confidence Interval for % Arrested at Least Once. The probability of arrest per offense is given by the number of arrests in the year preceding the baseline interview divided by the number of self-reported offenses in the year preceding the baseline interview. The average of this quantity for each group is presented as the Mean Probability of Arrest per Offense.

Connecting OR and SRO - Pathways Data

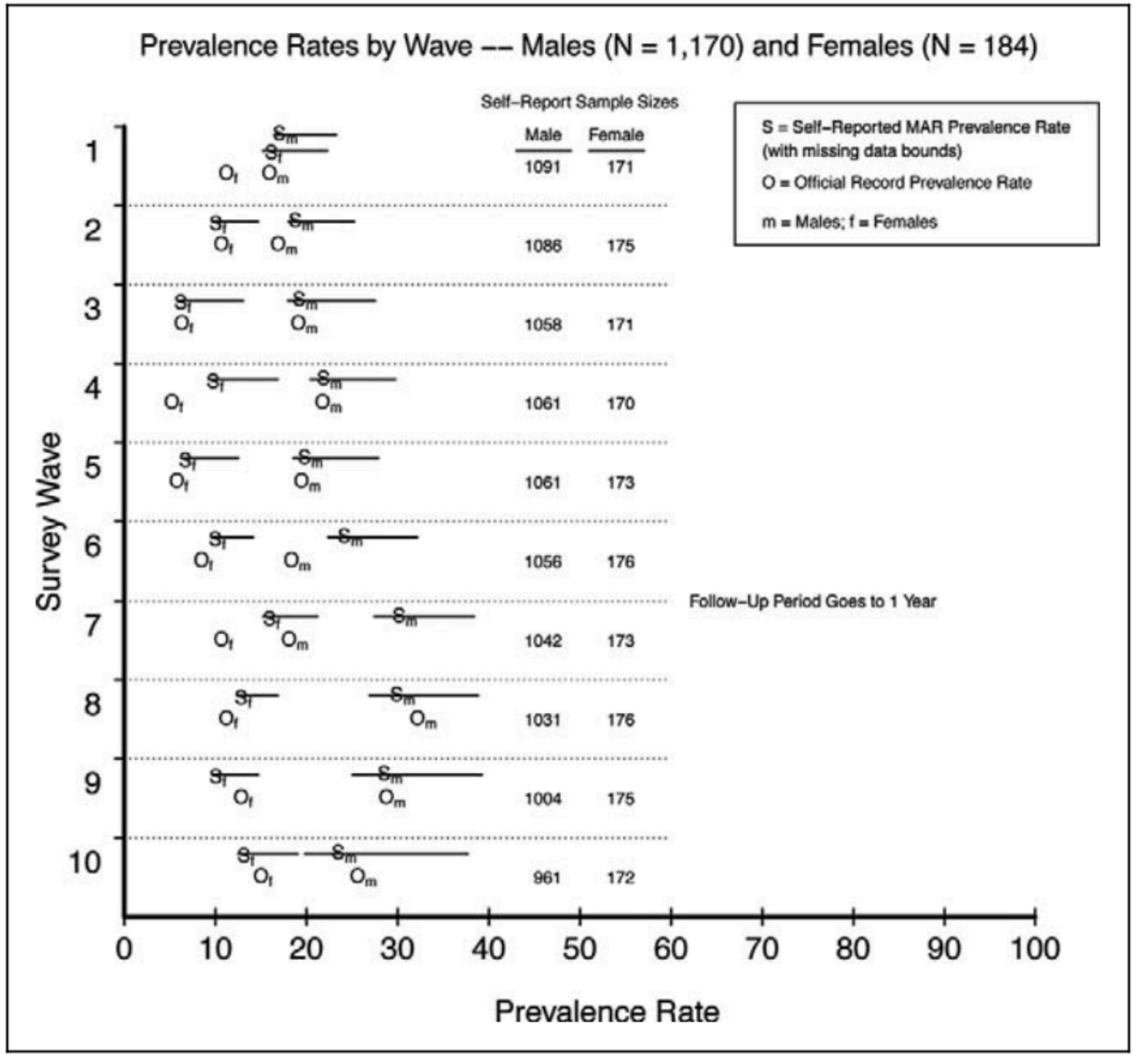


Figure 2. Prevalence rates by pathways gender groups (Male, $N = 1{,}170$; Females, $N = 184$).

Connecting OR and SRO - Conceptual

		Offend at Least Once (SRO)		
		No	Yes	Total
Offend at Least Once (OR)	No	Hit	Miss	∑
	Yes	Miss	Hit	∑
	Total	∑	∑	∑∑

Note: If cases are randomly scattered around the table the odds ratio will be 1. As hits increase and misses decrease, the correspondence odds ratio goes up.

Connecting OR and SRO - Pathways Data

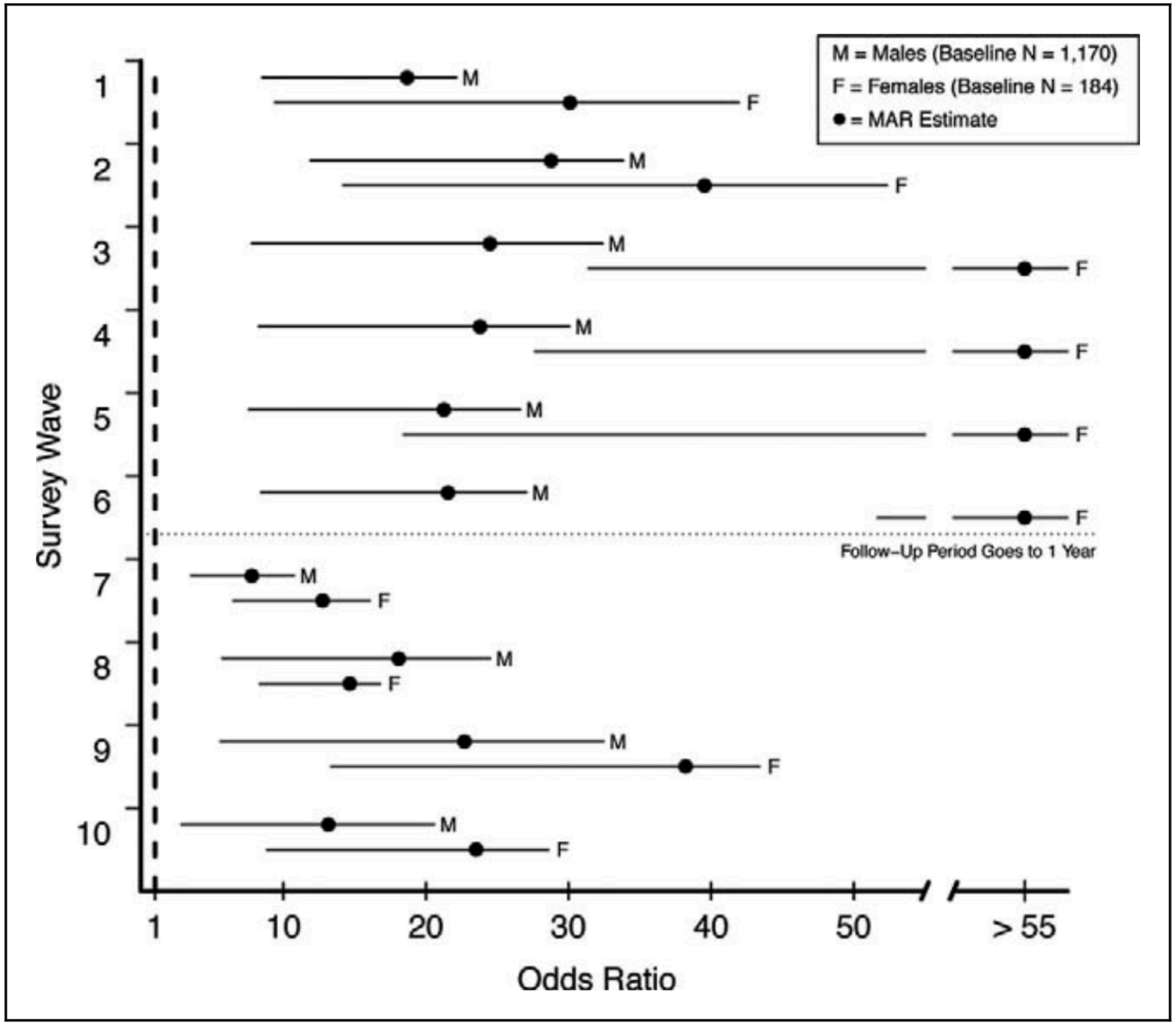
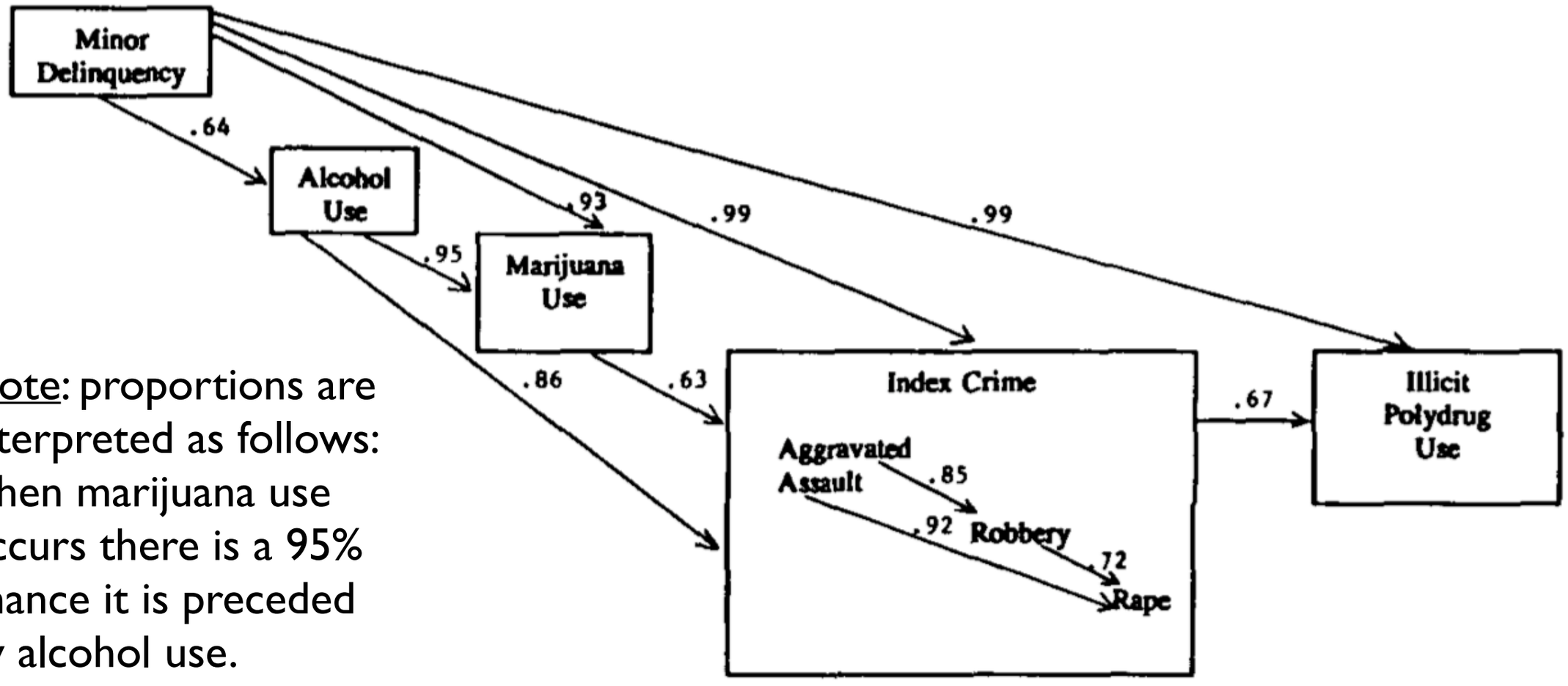


Figure 5. Correspondence odds ratios by pathways gender groups.

NYS Offense Progression

Figure 5. Developmental Progression by Type of Offense, NYS, Total Sample



Note: proportions are interpreted as follows: when marijuana use occurs there is a 95% chance it is preceded by alcohol use.

Source: D.S. Elliott (1994). Serious violent offenders: onset, developmental course, and termination - the American Society of Criminology 1993 Presidential Address. Criminology, 32:1-21.

Diversity of Offending

Table 1. NYS Serious Violent Offenders' Offense Patterns, 1980[a]

Offense	Prevalence	Offending Rate/100	% Total
Felony Assault	80.6	501	77
Felony Theft	65.7	770	79
Robbery	25.4	206	89
Index	100.0	1140	83
Minor Assault	73.1	1513	57
Minor Theft	68.7	1069	44
Illegal Services	56.7	6640	66
Public Disorder	80.6	5942	26
Vandalism	71.2	571	40
Total Delinquency	100.0	16142	50
Alcohol Use	94.0	12075	12
Marijuana Use	85.1	14001	20
Polydrug Use	55.2	4352	36
Problem Drug Use	54.5	—	—
Mental Health Problems	21.2	—	—

[a] Represents 4.5% of total NYS sample for 1980 (N=67).

Source: D.S. Elliott (1994). Serious violent offenders: onset, developmental course, and termination - the American Society of Criminology 1993 Presidential Address. Criminology, 32:1-21.

NYS Arrest Data

Wave 5 Response	Wave 6 Response: No Arrest	Wave 6 Response: Arrest	Wave 6 Response: Missing Data	Total
No Arrest	1,142	132	77	1,351
Arrest	48	82	13	143
Missing Data	71	21	139	231
Total	1,261	235	229	1,725

NYS Arrest Data

Males (N = 918)							
	Age at Wave 6						
Quantity	18	19	20	21	22	23	24
Number of Cases	127	128	135	148	138	131	111
Number Not Arrested	91	86	73	82	70	76	65
Number Arrested	27	29	43	35	43	40	21
Number Missing	9	13	19	31	25	15	25
Percent Missing	7.1	10.2	14.1	20.9	18.1	11.5	22.5
Percent Arrested	22.9	25.2	37.1	29.9	38.1	34.5	24.4

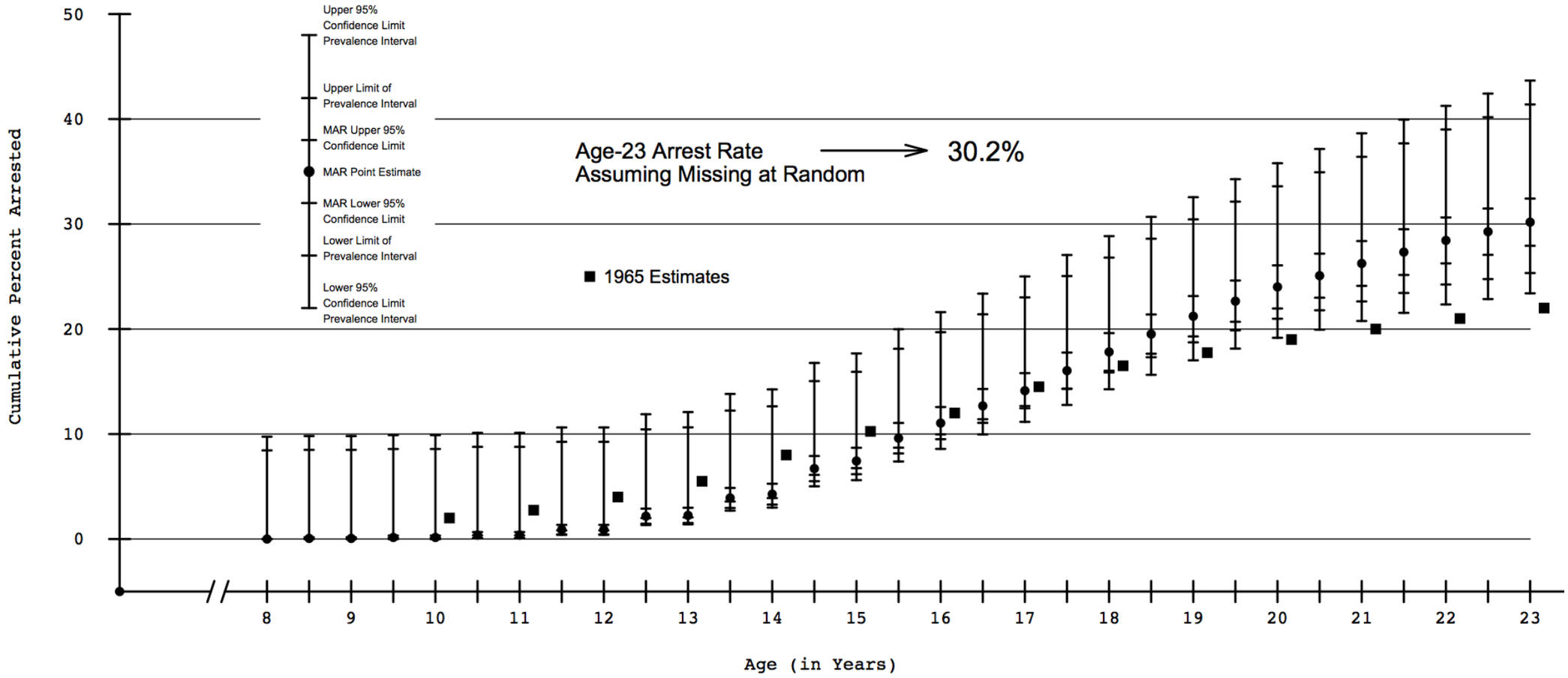
Females (N = 807)							
	Age at Wave 6						
Quantity	18	19	20	21	22	23	24
Number of Cases	135	129	134	110	115	108	86
Number Not Arrested	102	108	114	92	95	88	71
Number Arrested	10	9	11	9	8	6	5
Number Missing	13	12	9	9	12	14	10
Percent Missing	10.4	9.3	6.7	8.2	10.4	13.0	11.6
Percent Arrested	8.9	7.7	8.8	8.9	7.8	6.4	6.6

Note: Percent arrested is based on nonmissing cases only.

Arrest Questions

- NLSY Wave I arrest question: "Have you ever been arrested by the police or taken into custody for an illegal or delinquent offense (do not include arrests for minor traffic violations)?"
- NLSY follow-up arrest question: "Since the date of last interview on [date of last interview], have you been arrested by the police or taken into custody for an illegal or delinquent offense (do not include arrests for minor traffic violations)?"

Cumulative Arrest Prevalence Estimates from NLSY



Arrests and CJ System Workload

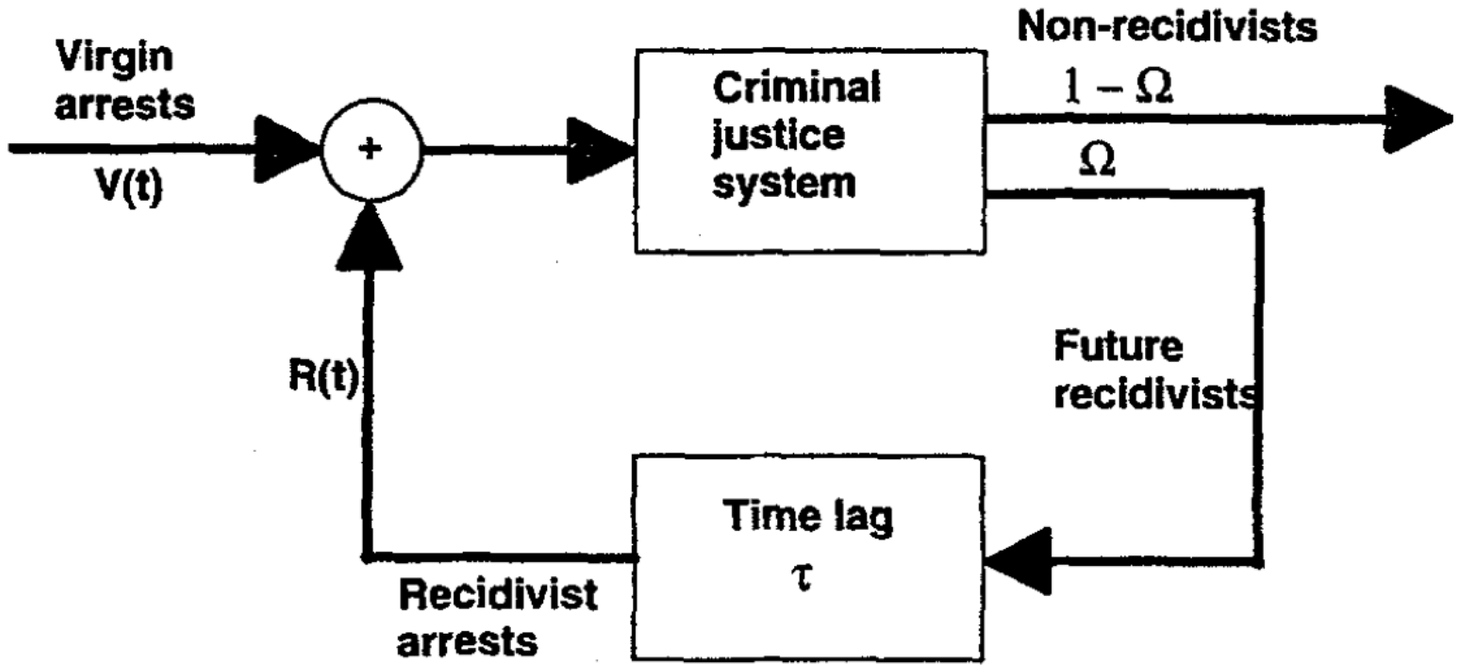
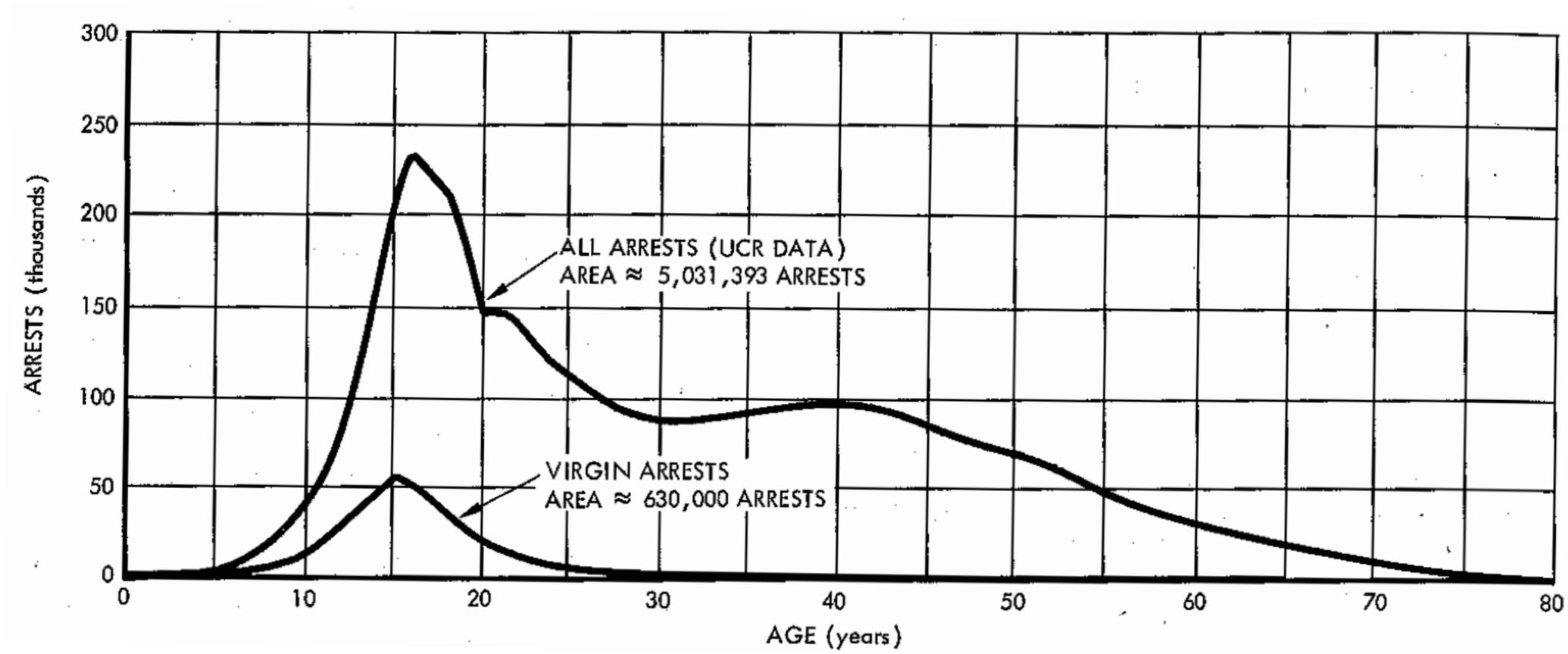


Fig. 4. A simplified criminal justice feedback model.

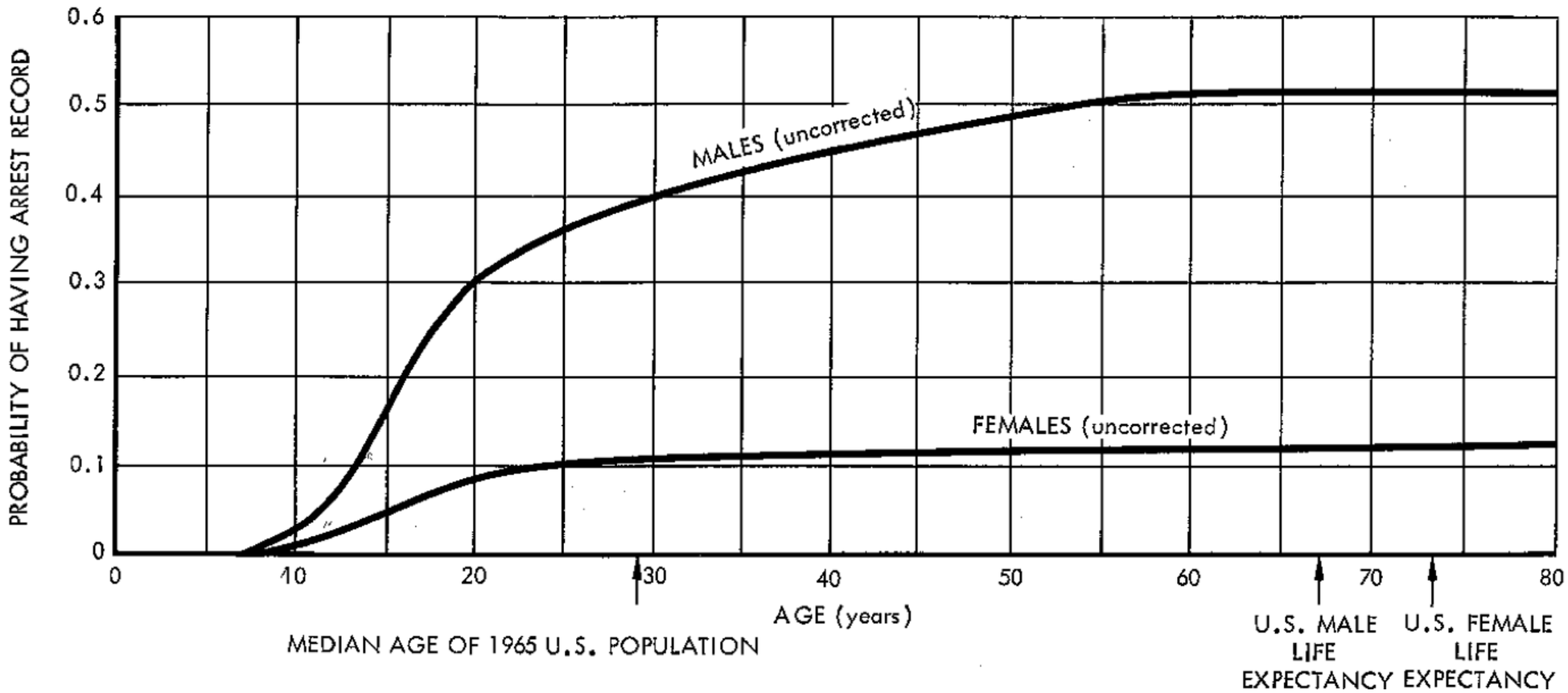
Source: Michael D. Maltz (1996). From Poisson to the present: Applying operations research to problems of crime and justice. *Journal of Quantitative Criminology*, 12:3-61 (at page 16).

Christensen (1967:218; Figure J-2)



Source: Ronald Christensen (1967). Projected percentage of U.S. population with criminal arrest and conviction records. In *Task Force Report: Science and Technology*, pp. 216-228. Institute for Defense Analysis, Ed. Washington, DC: U.S. Government Printing Office.

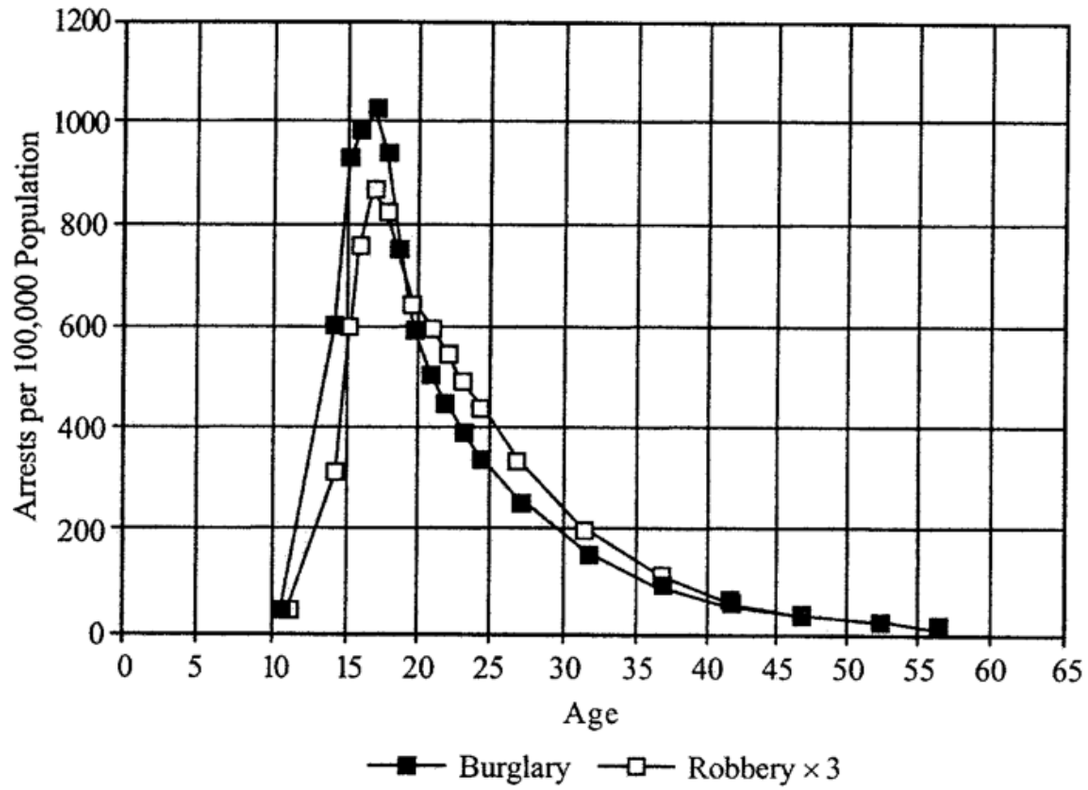
From UCR Arrest Counts to Cumulative Arrest Prevalence



Source: Ronald Christensen (1967). Projected percentage of U.S. population with criminal arrest and conviction records. In *Task Force Report: Science and Technology*, pp. 216-228. Institute for Defense Analysis, Ed. Washington, DC: U.S. Government Printing Office.

Arrest Data from 1985 UCR

Figure 2a
Age-Specific Arrest Rates
Robbery and Burglary in 1985



Source: Alfred Blumstein (1995). Youth violence, guns, and the illicit drug industry. *Journal of Criminal Law and Criminology*, 86:10-36.