



Current Research and the National Canine Research Database

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Today's Presentation

- Highlights of the Florida Study
- Overview of current canine research
- Introduction to the National Canine Research Database



This Study Seeks To

1. Develop a new methodology for collecting bite ratio data;
2. Examine the effect of the paradigmatic shift to the “bark and hold” training method of patrol dogs in the State of Florida;
3. Determine to what extent bite ratios differed based upon selected demographic and training variables.



Instrumentation

$$\textit{BiteRatio} = \frac{\textit{Bites}}{\textit{Apprehension}}$$

- One of the key dependent variables was the canine handler's bite ratio.
- Its is also used as a barometer of the inappropriate use of force.

Instrumentation (cont)

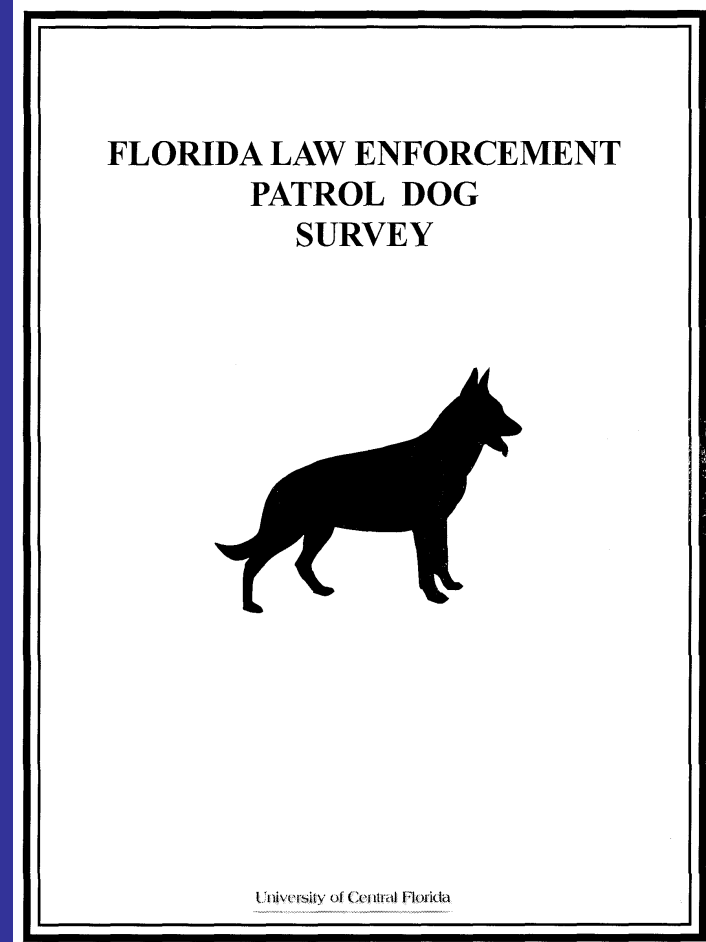
BITE RATIO DATA COLLECTOR (BRDC)

Tracking	_____	Apprehension	_____	Bite	_____	Ratio
Area Search	_____	Apprehension	_____	Bite	_____	Ratio
Building Search	_____	Apprehension	_____	Bite	_____	Ratio
Fleeing suspect	_____	Apprehension	_____	Bite	_____	Ratio

Total # bites / Total # apprehensions = True bite ratio

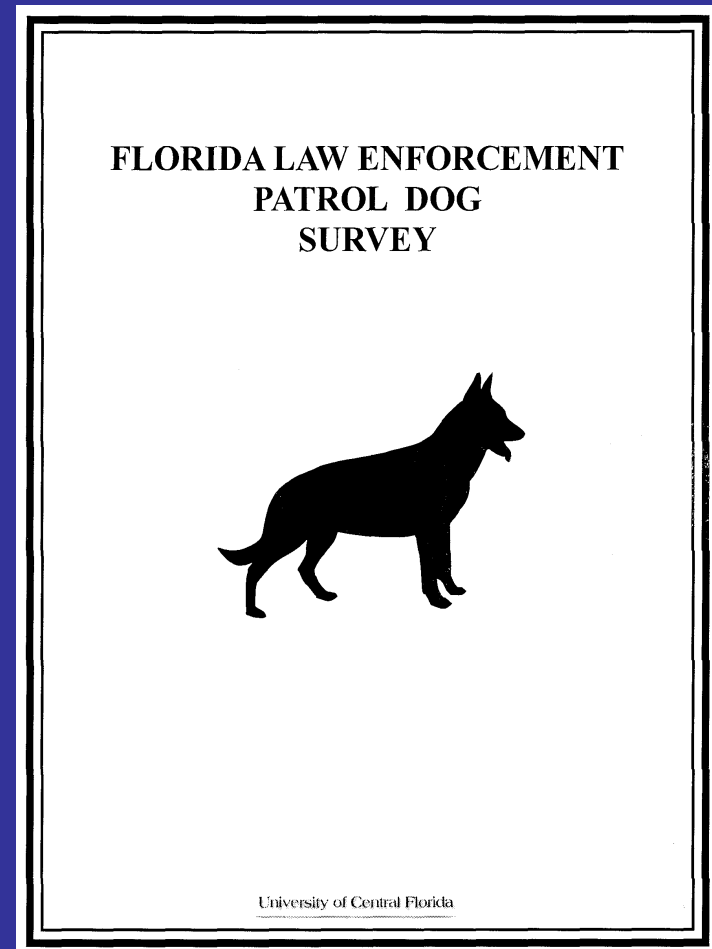
The Survey

- Modified by a select group of canine handlers through email conferences.
- Preceded by a press release that was printed in the major canine association newsletters and websites.
- Used a modification of the Dillman Method for survey research.



The Survey (cont)

- In October of 2002, the survey was sent to 334 police dog teams in the State of Florida.
 - Of the total, 181 surveys were returned resulting in a response rate of 52%



BRDC Data

- A total of 444 suspects were bitten.
- Tracking 170
- Building Search 98
- Area Search 48
- Fleeing Suspect 128



The dependent variables for bite ratios (traditionally reported and the bite ratio data collector) were severely positively skewed. As a result, a log₁₀ transformation was completed to produce a normal distribution.

Handler Demographics

Demographic Information	Frequency	Percent
Gender (n = 181)		
Male	177	97.8%
Female	4	2.2%
Race (n = 178)		
White	161	91.0%
Black	2	1.1%
Hispanic	13	7.3%
Other	1	.6%
Education (n = 181)		
High School / GED	15	8.3%
Some College	99	54.7%
Associates Degree	23	12.7%
Bachelors Degree	42	23.2%
Advanced Degree	2	1.1%
Age (n = 177)		
Median	36.0	
Mean	36.4	
Number of years as handler (n = 178)		
Median	5.0	
Mean	6.9	

Canine Demographics

Demographic Information	Frequency	Percent
Breed (n = 181)		
German Shepherd	142	78.5%
I Malinois	34	18.8%
Other	5	2.8%
Location of purchase (n = 181)		
Locally	37	20.4%
Not locally, but within state	55	30.4%
Not within state, but within U.S.	34	18.8%
Outside the U.S	55	30.4%
Country of foreign purchase (n = 47)		
Germany	10	21.3%
Hungary	19	40.4%
Czech Republic	6	12.8%
Yugoslavia	1	2.1%
Holland	11	23.4%
Length of Original Training in hours (n = 177)		
Median	480	
Mean	479	

Organizational

Demographic Information	Frequency	Percent
Type (n = 179)		
Police Department	99	55.3%
Sheriff's Department	80	44.7%
Number of Officers (n = 179)		
Median	350	
Mean	697	
Number of Calls for Service (n = 174)		
Median	25	
Mean	30	
Agency ever sued because of K9 (n = 181)		
Yes	24	13.3%
No	157	86.7%
Settlement paid on K9 Lawsuit (n = 181)		
Yes	16	8.8%
No	165	91.2%
Monitors bite ratio (n = 180)		
Yes	143	79.4%
No	37	20.6%

Situational

<u>Demographic Information</u>	<u>Frequency</u>	<u>Percent</u>
Release on traffic offender (n = 180)		
Yes	9	5%
No	171	95%
Release on non-violent misdemeanor (n =180)		
Yes	15	8.3%
No	165	91.7%
Release on violent misdemeanor (n =180)		
Yes	91	50.6%
No	89	49.4%
Release on non-violent felon (n=180)		
Yes	168	93.3%
No	12	6.7%
Release on violent felon (n = 180)		
Yes	178	98.9%
No	2	1.1%
Restrictive Tracking Policy (n = 179)		
Yes	72	40.2%
No	107	59.8%

Training

<u>Demographic Information</u>	<u>Frequency</u>	<u>Percent</u>
Received Schutzhund training (n = 180)		
Yes	25	13.9%
No	155	86.1%
Use of electric collar in training (n= 181)		
Yes	89	49.2%
No	92	50.8%
Use of Bungee (n = 181)		
Yes	84	46.4%
No	97	53.6%
Use of Agitation in Tracking (n = 180)		
Yes	59	32.8%
No	121	67.2%
Number of hours /month training dog (n = 178)		
Median	20.0	
Mean	24.3	
Apprehension Method (n = 181)		
Bark and Hold	46	25.4%
Bite and Hold	135	74.6%

Comparison of Data Collection Method

- The t-test between the two models reveal that there is a significant difference between the self reported number of bites depending on how the data are collected and the question asked.
 - In this case, the average canine officer reported 8 more bites when using the BRDC than when asked to self report what they consider to be their department's traditional bite ratio.

<u>Method</u>	<u>Mean</u>	<u>Standard Deviation</u>		
Self Report (n=181)	9.19	9.70		
BRDC (n=181)	17.45	21.84		

<u>Paired Methods</u>	<u>Mean</u>	<u>SD</u>	<u>DF</u>	<u>t</u>
Self Report-BRDC	-8.25	21.14	180	-5.25***

Note. *** p< .0001 (one tailed). SD = standard deviation, DF= degrees of freedom.

Comparison of Apprehension Method

- The results indicate that using the traditional reporting mechanism, dogs trained with “bite and hold techniques” have significantly higher bite ratios.
- However, when using the alternative reporting mechanism, the results flip.
 - Here bark and hold trained dogs report significantly higher bite ratios.

	<u>Measurements</u>			
	<u>Self-Reported</u>		<u>BRDC</u>	
	M	SD	M	SD
Bark and Hold	6.05	5.82	22.4	26.7
Bite and Hold	10.3	10.5	15.7	19.8
t	-3.37**		1.79*	

Note. * $p < .05$; ** $p \leq .001$ (one tailed).
 SD = standard deviation, M = mean.

Multiple Regression of Bite Ratios by Combined Variables
Self-Reported Bite Ratio Bite Ratio Data Collector

Variable	B	SE	β	B	S	β
Apprehend Meth	3.70	2.27	.154	-26.8	4.7	-.480***
Dog Breed	5.96	2.24	-.237***	-20.5	4.63	-.350***
Schutzhund	-2.01	2.47	-.074	-12.6	4.65	-.199***
# of Calls	.049	.043	.103	-.209	.088	-.189**
Gender	-6.57	5.24	-.094	-23.6	10.7	-.145*
Sex Intact	-6.00	2.16	-.220***	-7.70	4.48	-.121
Age	.120	.189	.080	-.571	.392	-.164
Supervisor	-.238	2.24	-.009	-3.06	4.64	-.047
Years in K9	-.139	.195	-.083	.068	.403	.018
Hours Training	-.072	.064	-.092	-.122	.131	-.067
Agency Type	-4.08	1.77	-.204**	-4.69	3.67	-.101
# of Officers	-.001	.001	-.087	-.002	.002	-.073
Length cert	-.137	.395	-.028	1.27	.817	.109
Agency Sued	1.70	3.35	.059	6.67	6.94	.099
Agency Settle	-1.06	3.60	-.032	-9.90	7.46	-.130
Orig Training	-.012	.006	-.176**	-.015	.012	-.090
Policy scale	-1.10	.976	-.095	-.505	2.02	-.019
Track Restrict	5.50	1.69	.276***	-1.12	3.49	-.024
F	3.28****			6.24****		
R	.544			.666		
R ²	.296			.444		

Note. B = unstandardized coefficient, SE = standard error, β = standardized coefficient. *p<.05, **p <.01, *** p < .001, (one tailed).

Recent Research

- Media Study
- Student Perceptions of K9 Units
- Contingent valuation of Service Dogs
- Forensic Applications
- K9's in the Force Continuum
- Scent Study

Media Study

- 2022 newspapers over 7 year period
- Break into five categories
- Vest phenomenon
- Relatively stable across other categories
- Relatively stable across regions
- Relatively stable across time
- Tend to be positive

	Interest	Capture	Force	Harm	Vest	Total
1994	163 (59%)	57 (21%)	16 (6%)	38 (14%)	0 (0%)	274
1995	154 (52%)	66 (22%)	32 (11%)	45 (15%)	2 (1%)	299
1996	193 (64%)	56 (18%)	19 (6%)	35 (12%)	0 (0%)	303
1997	151 (50%)	58 (19%)	18 (6%)	64 (21%)	9 (3%)	300
1998	166 (56%)	47 (16%)	14 (5%)	67 (23%)	3 (1%)	297
1999	123 (49%)	29 (12%)	22 (9%)	37 (15%)	39 (16%)	250
2000	140 (47%)	46 (15%)	33 (11%)	37 (12%)	43 (14%)	299
Totals	1090 (58%)	359 (18%)	154 (8%)	323 (16%)	96 (5%)	2202

Student Perceptions Studies

- K9 reduces crime 67%
- K9 reduces drugs 70%
- K9 waste of money 12%
- K9 racist 9%
- K9 able to track down 84%
- Willing to pay \$1 (drug) 73%
- Willing to pay \$1 (bomb) 78%

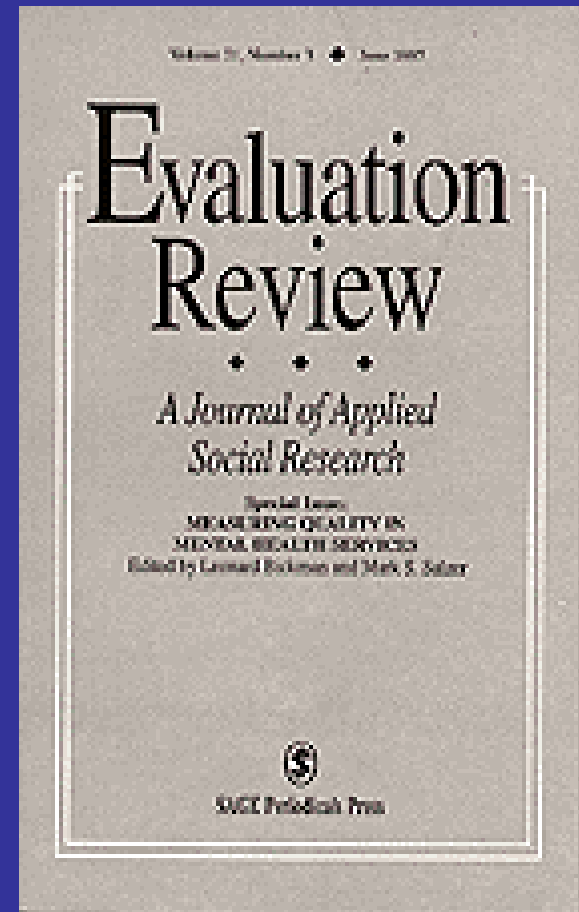
National Canine Research Database

- Open free access to hundreds of research studies
- Stimulate research
- Link students to administrators
- Link handlers to researchers



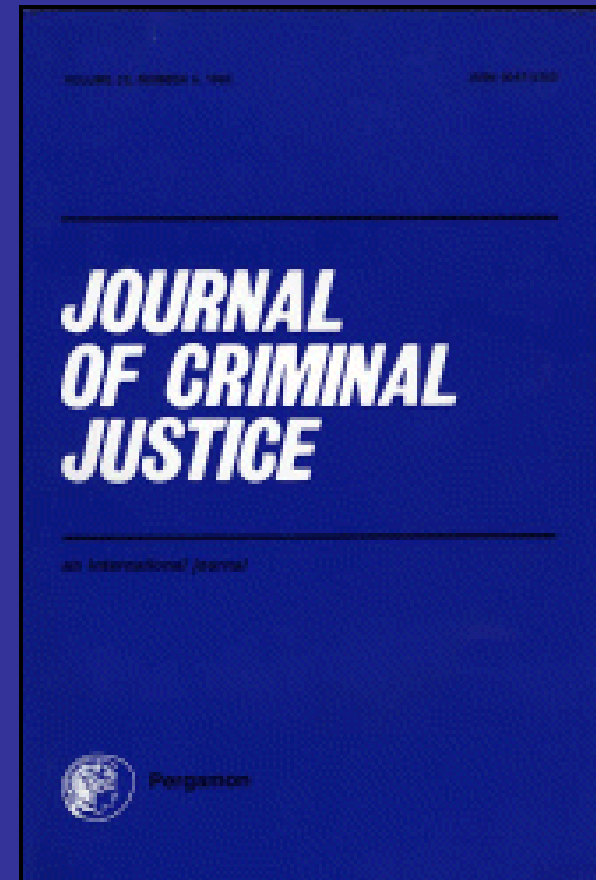
Review of the Literature

- Campbell, A., Berk, R., & Fyfe, J. (1998). Deployment of Violence: The Los Angeles Police Department's use of dogs. *Evaluation Review*, 22 (4), 535-561.



Review of the Literature

- Hickey, E. & Hoffman, P. (2003). To bite or not to bite: Canine apprehensions in a large suburban police department. *Journal of Criminal Justice*, 31, 147-154.



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Narcotics Canine Evaluation**

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Questions?

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