

# INTRODUCTION TO TACTICAL FORECASTING

Accuracy and Precision



Former President (2007-2012)  
Lifetime Certified Law Enforcement Analyst

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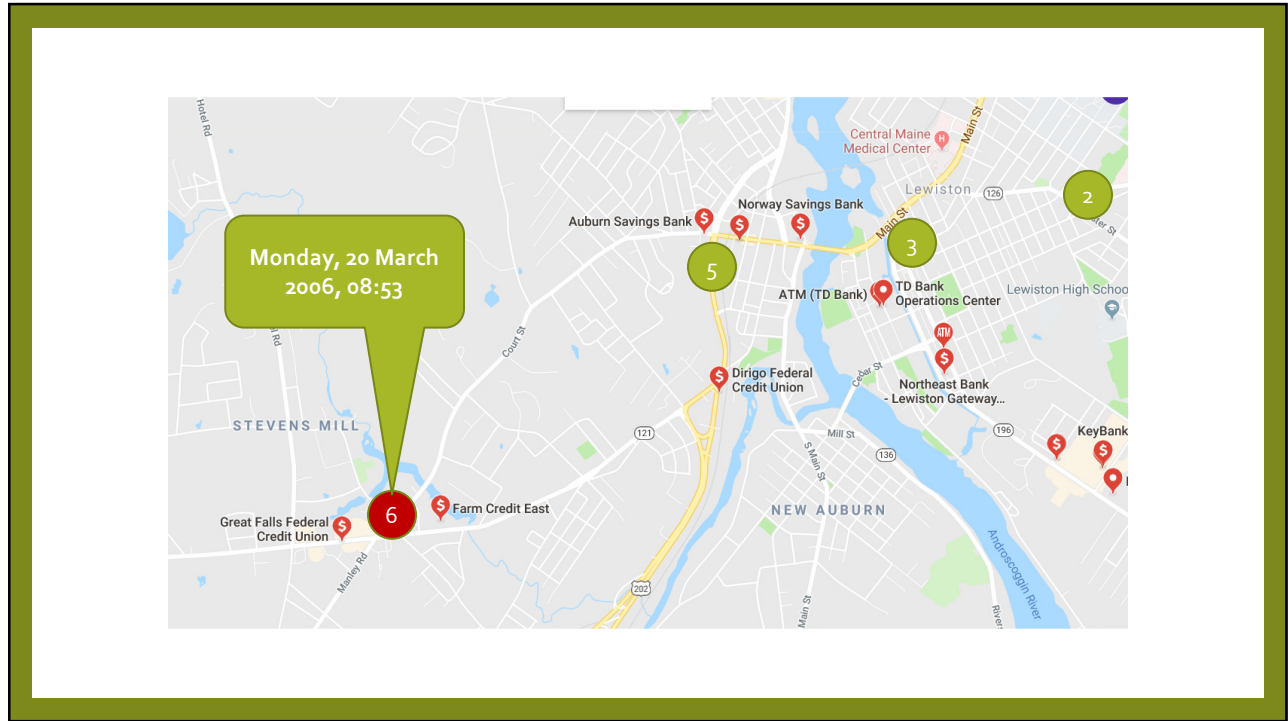
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## Lewiston bank robbery series

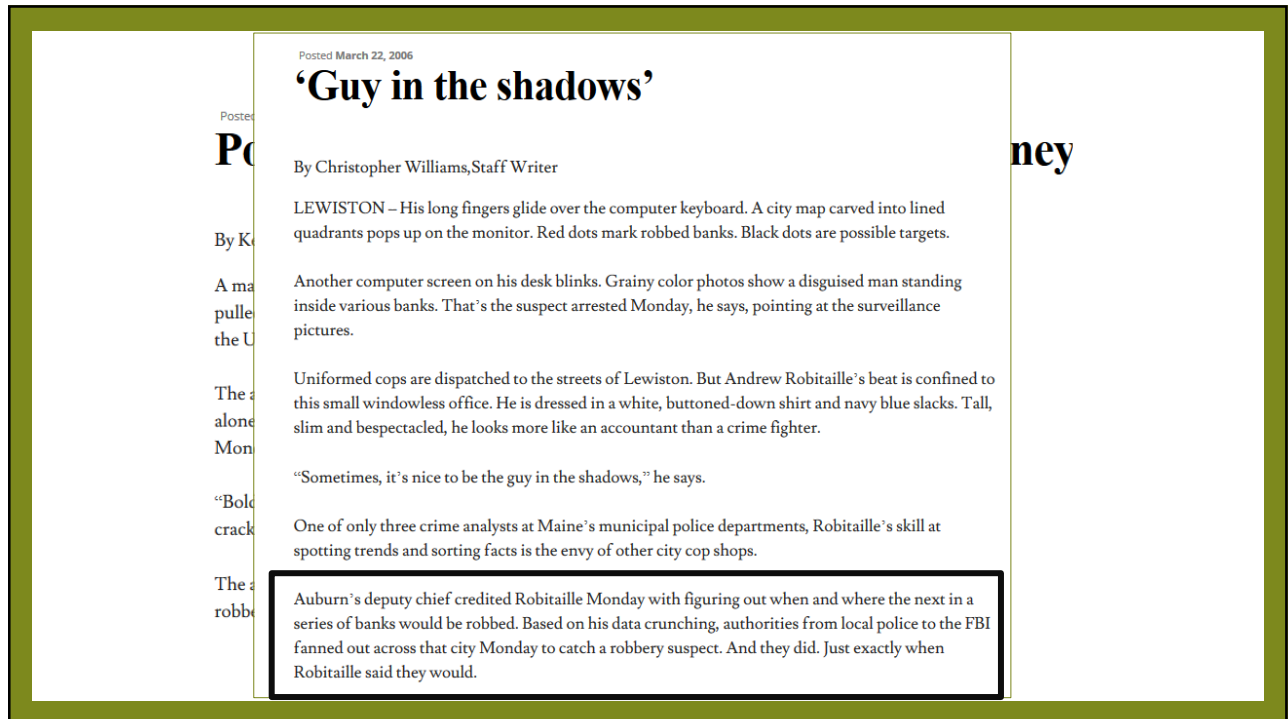
No.	Date/Time		Location	Stolen
1	11/21/2005 08:39 Mon		KeyBank 600 Center St, Auburn, ME	\$1,320
2	11/28/2005 09:14 Mon	7	Auburn Savings Bank 325 Sabattus St, Lewiston, ME	\$2,900
3	12/19/2005 08:15 Mon	21	Androscoggin Bank 30 Lisbon St, Lewiston, ME	\$5,091
4	02/03/2006 09:00 Fri	46	Androscoggin Bank 580 Lisbon St, Lisbon Falls, ME	\$1,735
5	02/21/2006 09:06 Tue	18	Mechanics Savings Bank 100 Minot Ave, Auburn, ME	\$4,000

0.97 correlation between interval and dollar value stolen.

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# What are we forecasting?

- **Temporal forecasting**
  - Date or date range of next event (generally series only)
  - Day of week of next event
  - Time of day of next event
- **Spatial forecasting**
  - Spatial area of next event
  - Potential targets for next event
  - Directions of flight

**FAIRFAX COUNTY POLICE DEPARTMENT**  
**Mt. Vernon District Station - Criminal Investigations Section**  
**INFORMATIONAL BULLETIN**  
 LAW ENFORCEMENT SENSITIVE • DO NOT RELEASE TO THE MEDIA/PUBLIC

**RESIDENTIAL BURGLARY**

Since October 2013, there have been at least 10 residential burglaries in patrol area 211 that share the following similarities:

- Occur weekdays between 1100 and 1300hrs
- Tall, thin black male seen near or inside the targeted home
- Side or rear door/window smashed to gain entry
- Doors barricaded w/ large objects to prevent interruption by resident
- Coins were stolen or gathered near an exit point

The subject pictured below used credit cards stolen from 7117 Covecroft Rd at Union Station and Pentagon City Mall.

Detective Matt Ferguson  
 2511 Parkers Ln, Alexandria VA 22306  
 O: (703) 360-8426, x2255  
 C: (571) 722-6276  
 Call: Ferguson@fairfaxcounty.gov |

Created: April 21, 2014  
 Case Number: 2014-0420157

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# What are our variables?

- **Temporal Variables**
  - Intervals between offenses
  - Days of week
  - Times of day
  - Correlation with other variables
  - Time on scene
- **Spatial variables**
  - Coordinates
  - Distance
  - Direction
  - Location types

**SNCTC | CRIME ANALYSIS**  
 04/11/19 - 06/16/19 WM Mustache Robbery Series

**SUMMARY:**  
 Between April 11<sup>th</sup> and June 16<sup>th</sup> a series of 8 robbery events occurred at Subway and Radio Shack businesses within the following area commands: Enterprise (4 events), Southeast (2 events), and Northeast (2 events). Four (5) of the 8 incidents occurred on or near Rainbow Blvd. The last two robberies were committed at businesses the suspect had previously robbed, both are located off of Tropica Ave (Subway; 6980 W Tropica Ave (EA-52) and Radio Shack; 5125 E Tropica Ave (SE-K4)).

The suspect is described as a white male adult, approximately 6'0, 200 pounds, between 35-40 years of age, with a mustache. The suspect is typically seen wearing a long-sleeved shirt, blue jeans, a baseball cap and around his hand (not covering his face) under a light green camouflage or dark colored baseball hat, and white shoes or work boots.

Upon entering the business, the suspect orders the employees behind the counter near the cash register and to put their hands on the counter. He then simulates a hand-to-hand transaction and demands the money from the register. The suspect then has the employees get down on the ground before he flees the business. In 3 events, the suspect was seen fleeing in a small white older model 2-door pickup truck.

**Target Day of Week and Time of Day:**  
 Based on previous behavior, it is likely that the suspect will hit on a Wednesday or Saturday, between 1700 and 2059 hours. On an average, there have been 11 days between robbery events. In recent events, the suspect has robbed the businesses between 1700 and 1832 hours. Potential target locations are shown on page 2.

Source: Police Use, CAD  
 A035C Robbery Alerts

Law Enforcement Section - SNCTC Documentation  
 Las Vegas Metropolitan Police Department

303 Cook # 4894  
 June 11, 2022

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# Principles of tactical forecasting

1. Forecasting is inherent in both spatial and temporal analysis.
2. Forecasting is the art of balancing precision and accuracy.
3. Although you can begin with common templates, a good forecast involves creating unique models tailored to the specific series.
  - A model is not a formula.
4. There is no restriction on the number of crimes, although more data generally means greater precision and accuracy.
5. Test your model through application to previous cases.
6. The vagaries of human behavior and unknown variables make it difficult to achieve high levels of both precision and accuracy.
7. The expression of your forecast should be tailored to recommended or likely tactical responses by your agency.

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### VISALIA POLICE DEPARTMENT

#### FULL SIZE TRUCK BURGLARY SERIES BULLETIN

CONFIDENTIAL - FOR LAW ENFORCEMENT USE ONLY

Incident	Incident Address	Date	Split Time
23-012449	1515 S Mooney Blvd	04/10/2023	8:20
23-012758	100 E Colwell Ave, White Music	04/20/2023	4:41
23-044237	404 E Tulare Ave, 3 Stop Shop	05/28/2023	5:08
23-044265	3550 S Downmore St, Auto Oil Chargers	05/28/2023	4:10
23-045864	1426 N Ben Maddox Way	06/02/2023	6:50
23-048066	2040 S Mooney Blvd	06/09/2023	4:22
	202 North Highway 83, Lindsay	06/09/2023	7:30
23-048702	603 E Main St, Sierra Boyle Works	06/11/2023	5:08
23-049992	1339 S Mooney Blvd, Zama Audio 2	06/15/2023	5:04
23-051130	1813 W Colwell Ave, Ridge Drive	06/16/2023	4:58
23P28367	1507 W Morton Ave, Porterville	06/24/2023	2:55

Since 4/19/2023, there have been eight commercial burglaries grand theft attributed to the same group within the City of Visalia. The suspects used a heavy-duty truck to back into the back of the building, used a concrete saw to cut through the doors and security doors of the businesses. When the saw is used, it takes less than 30 seconds to saw through the lock. Once on the inside, the suspects target high value property which has included bicycles, speakers and amplifiers, golf clubs, and an ATM.

In six of the burglaries, the suspect vehicle was determined to be later recovered in the county areas around Lindsay and Exeter, outstanding.

*Additional information and photos on page 2*

### FAIRFAX COUNTY POLICE DEPARTMENT

Office of Data Analytics - Crime Analysis Unit

## INFORMATION BULLETIN

LAW ENFORCEMENT SENSITIVE • NO UNAUTHORIZED DISSEMINATION

### TOBACCO STORE BURGLARY SERIES

2023-1290048 - Rock used to shatter front glass door

2023-1330028 - Appears to be hammer strikes to the front glass door

Note - The City of Alexandria and City of Falls Church have had incidents with a similar MO

Incident	Date	Time	DOW	Crime	Address	Patrol Area	Vehicle/Business
2023-1290048	05/09/2023	23:00 - 05:00	Tuesday	Auto Theft	9807 Hagel Cir	641	Kia Forte
2023-1290048	05/09/2023	04:18	Tuesday	Burglary	5707 Seminary Rd	621	Tobacco Mart
2023-1330006	05/13/2023	03:00 - 10:20	Saturday	Auto Theft	7615 Leitch Chapel Cir	640	Hyundai Elantra
2023-1330008	05/13/2023	02:40	Saturday	Burglary	6640 Brandon Ave	610	Tobacco & Vape
2023-1330042	05/13/2023	03:39	Saturday	Auto Theft	7026 Rhoden Ct	600	Hyundai Elantra
2023-1330060	05/13/2023	Unknown (Overnight)	Saturday	Burglary	61297 Backlick Rd	610	Tobacco Plus

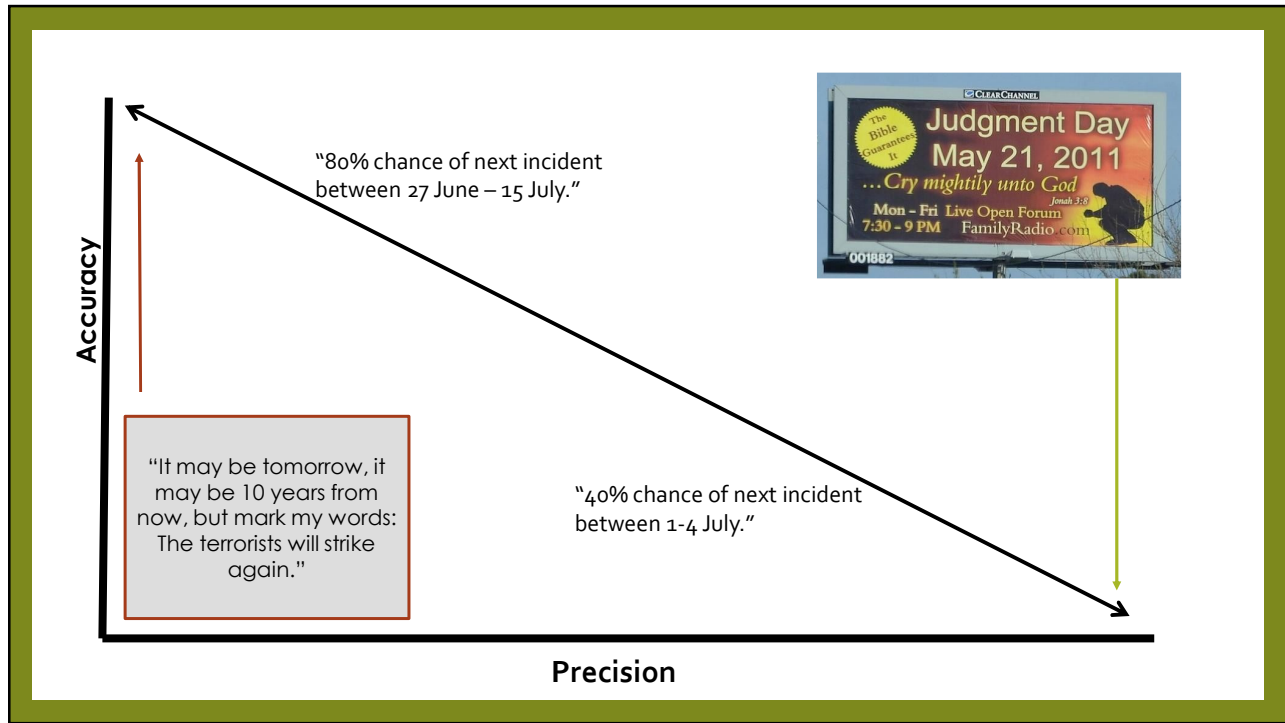
FCPD has had 3 recent incidents of Tobacco Store burglaries involving suspects arriving in a stolen vehicle. 2 Hyundai Elantras and 1 Kia Forte were stolen, all with the ignition punched and the right rear window shattered, consistent with the MO of the "TikTok Challenge." These stolen vehicles were subsequently driven to Tobacco Stores where the front glass window of the business was shattered and various vape products were taken. In two incidents, surveillance video shows suspects are a group of 4 males, likely juveniles. If you have any information or have similar incidents, please contact Crime Analyst Joanna Baranello.

Crime Analyst Joanna Baranello  
6507 Columbia Pike, Annandale VA 22003  
O: 703-333-3549  
Joanna.Baranello@fairfaxcounty.gov

Created: May 17, 2023  
Case Number: Multiple - see matrix

April 2023

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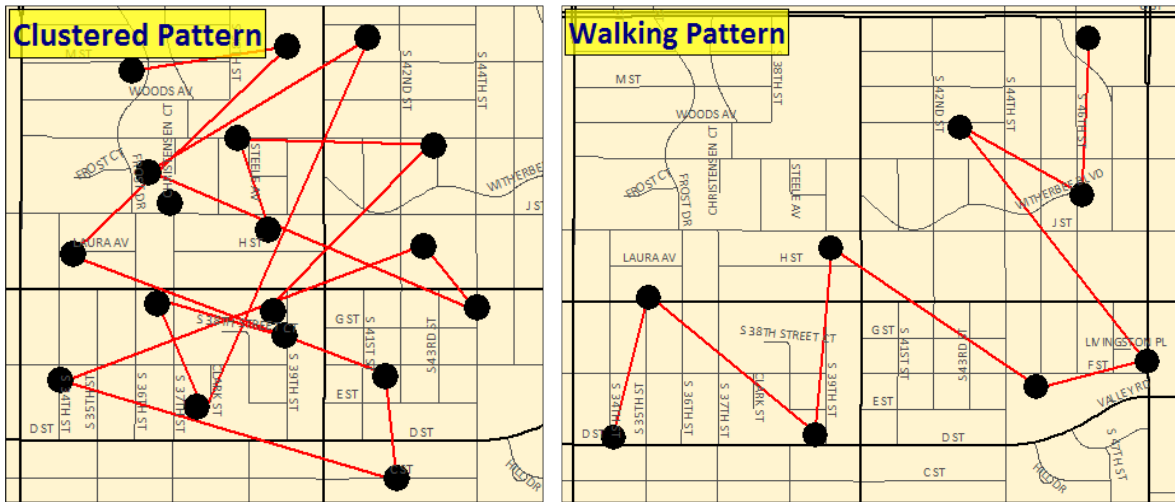
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**Smithfield Convenience Store Robbery Series**

CaseNo	DateTime	Location	Interval	Time
2022-1608	08/09/2022 19:50	Christy's, 185 Main St		19:50:00
2022-1636	08/23/2022 18:43	Cumberland Farms, 213 Union St	14	18:43:00
2022-1646	08/28/2022 19:12	White Hen, 180 Boston St	5	19:12:00
2022-1802	09/06/2022 20:03	7-11, 695 California Ave	9	20:03:00
2022-1816	09/13/2022 17:40	QuickTrip, 1050 Bakersfield Blvd	7	17:40:00
2022-1830	09/20/2022 22:20	Stop & Go, 800 Camino Del Ladron	7	22:20:00
2022-1838	09/24/2022 20:00	Gas & Go, 1500 First St	4	20:00:00
2022-1846	09/28/2022 18:30	Texaco Food Mart, 5609 Stine Rd	4	18:30:00
2022-1858	10/04/2022 18:18	Jenny's Mini-Mart, 1201 Dawn St	6	18:18:00
2022-2010	10/09/2022 19:00	Sal's EZ-Stop, 506 Charlana Dr	5	19:00:00
2022-2040	10/25/2022 17:55	Mobil Mart, 4621 American Ave	16	17:55:00
2022-2042	10/26/2022 18:52	Pump & Pay, 1803 G St	1	18:52:00
2022-2054	11/01/2022 19:04	Gas & Sip, 200 Elm Ave	6	19:04:00
2022-2220	11/14/2022 18:35	Pump & Run, 1030 Bruce Way	13	18:35:00
		<b>AVERAGE</b>	7	19:08:43
		<b>ST. DEV.</b>	4	01:07:19

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## Central tendency or trend?



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1, 1, 2, 3, 4, 7, 11, 18, \_\_\_\_\_

7, 5, 8, 4, 9, 3, \_\_\_\_\_

3, 10, 7, 4, 1, 9, 3, 6, 6, 10, \_\_\_\_\_

1, 3, 3, 4, 6, 6, 7, 9, 10, 10, \_\_\_\_\_

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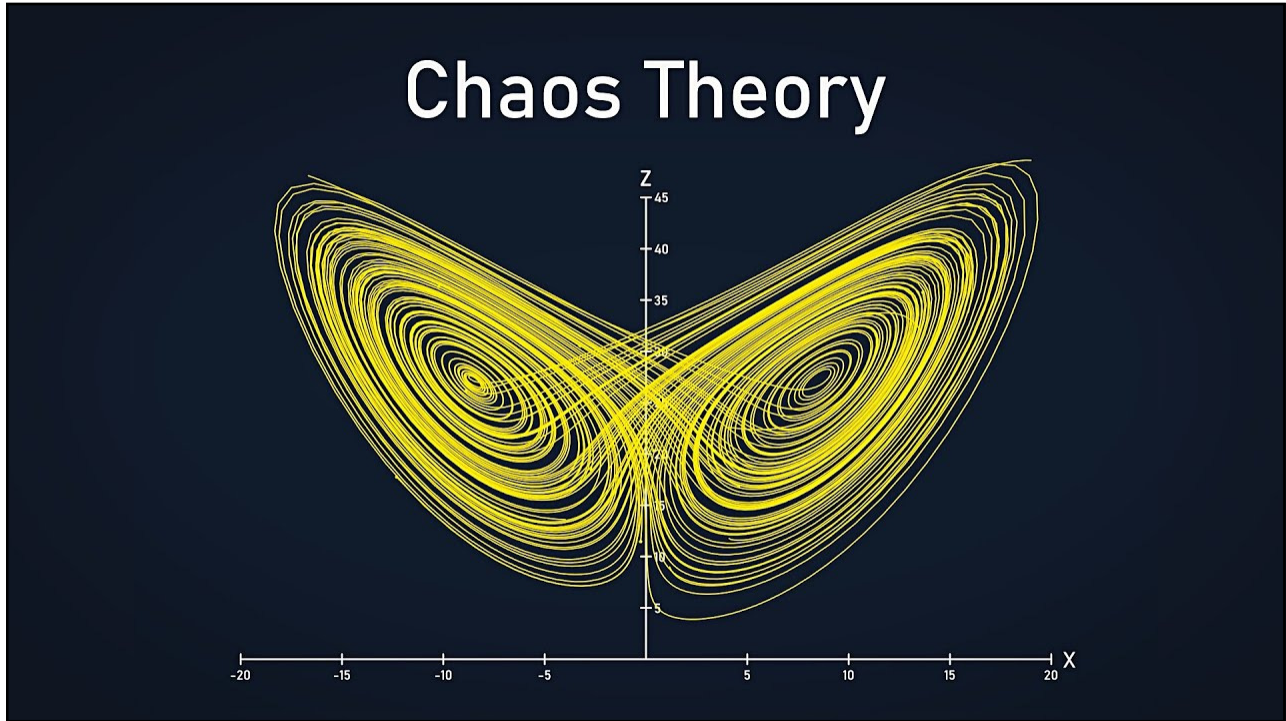
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## Equally valid forecasting models

"This offender favors the first 10 days of the month. He typically strikes during the first Friday, Saturday, or Sunday of the month, then two or three more times in quick succession (2-3 days apart), but never after the 10th. He will then wait until the beginning of the next month to strike again."

$$Z = \frac{A+B \times \sqrt{C}}{\sin(D) - E^2}$$

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## Forecast with tactical action in mind

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# Thank you!

## Christopher W. Bruce

*Trainer and consultant in crime analysis  
and crime reduction*

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Crime analysis	Hot spot policing
Data access	DDACTS
Data management	COMPSTAT
Crime mapping	Pattern intervention
Crime statistics	Problem-solving

  
International Association of  
**CRIME ANALYSTS**  
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Certified Law  
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*Assistant Professor of  
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brucec@husson.edu*