

# A Practical Guide to Pattern Recognition in Crime Analysis: Taxonomic, Typological, and Ontological Thinking

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## The Problem Every Crime Analyst Faces

You're staring at 30 burglary reports from the last six weeks. Some feel connected, but you can't articulate why. You start looking for similarities, but soon you're overwhelmed—or worse, you're seeing patterns everywhere that don't hold up under scrutiny.

When your supervisor asks, "How did you determine these cases are linked?" you hear yourself say something vague: "They just seemed similar" or "Something about them clicked."

**This guide introduces three cognitive frameworks that transform pattern recognition from mysterious intuition into systematic methodology.**

## What You're Actually Doing When You Find Patterns

When experienced analysts successfully identify crime patterns, their brains move through three distinct modes of thinking:

### 1. TAXONOMIC THINKING: Eliminate the Noise

**What it is:** Organizing information into clearly defined categories based on inherent characteristics.

**Why it matters:** This is your noise-reduction filter. By sorting incidents into distinct categories, you quickly eliminate what's NOT related, clearing mental space to focus on what might be.

**In practice:**

- Sort 50 incidents by UCR crime type
- Separate residential burglaries from commercial ones
- Distinguish forced entry from no forced entry
- Categorize by basic temporal patterns (day vs. night)

**Key insight:** Taxonomic thinking is *eliminative*. Those three armed robberies probably aren't part of your residential burglary series. You just eliminated 94% of your noise.

**The limitation:** Taxonomy alone won't tell you which residential burglaries ARE linked. For that, you need the next framework.

### 2. TYPOLOGICAL THINKING: Find Behavioral Signatures

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**What it is:** Grouping things by shared characteristics or behaviors, even across different taxonomic categories.

**Why it matters:** This is where patterns emerge. Real criminal behavior doesn't respect our filing systems. Typological thinking reveals connections that taxonomies miss.

**In practice:**

- Group incidents by entry method (forced rear door, regardless of what was stolen)
- Identify cases where suspect spent unusual time on scene
- Recognize similar suspect descriptions across different crime types
- Notice recurring temporal patterns (always Tuesday afternoons, always 10 PM-2 AM)

**Example:** Copper theft incidents might be filed taxonomically as theft, burglary, or vandalism. But typologically they share characteristics: industrial metals targeted, specific tools used, similar locations. The TYPE of behavior is consistent even though the taxonomic categories differ.

**Key insight:** Typological thinking lets you see connections ACROSS taxonomic boundaries.

**The limitation:** It identifies similarity, but not the complete picture of how things work together as a system.

### 3. ONTOLOGICAL THINKING: Map the Behavioral System

**What it is:** Understanding how all elements relate to each other as a complete behavioral system.

**Why it matters:** This is your validation layer. It's not enough that cases are similar—you need to understand WHY they're similar by mapping the complete behavioral pattern.

**In practice:**

- Map the complete MO: How does this offender select targets → approach → enter → behave inside → take items → exit → dispose of property → avoid detection?
- Understand WHY certain elements cluster (e.g., why smash-and-grab burglars cluster near highways)
- Recognize what elements are essential vs. situational
- See how behavior relates to geography, time, victim selection, and opportunity structures

**Example:** You have six commercial burglaries. Ontological analysis reveals that target location relates to time of day (isolated businesses, late night), which relates to entry method (side doors with poor lighting), which relates to property taken (cash registers and small safes), which relates to exit route (proximity to freeway access). The entire system is coherent.

This is what lets you predict where an offender might strike next, understand why they changed their MO in case #6, or recognize when a seemingly similar case is actually from a different offender.

**Key insight:** Ontological thinking builds a behavioral model. You're saying, "these cases represent the same behavioral SYSTEM in action."

### **How to Apply All Three: A Practical Example**

**Scenario:** You have 30 incidents over six months. You suspect a commercial burglary series.

#### **STEP 1: Taxonomic Thinking (Eliminate)**

- Sort all incidents by crime type
- Eliminate residential burglaries, robberies, thefts without forced entry
- Result: 18 commercial burglaries remain

#### **STEP 2: Typological Thinking (Group)**

- Look for recurring elements across the 18
- 12 have forced rear doors
- 8 of those 12 have similar property taken (cash registers, safes)
- 6 of those 8 occurred on weekends
- Result: Potential 6-case series identified

#### **STEP 3: Ontological Thinking (Validate)**

- Map the complete behavioral system for those 6 cases
- What's the relationship between:
  - Target location and time of day?
  - Entry method and property taken?
  - Disposal patterns and geographic clustering?
  - Victim selection and opportunity structures?

#### **Ontological analysis might reveal:**

- Two of your six cases don't actually fit—the behavioral system is different in subtle but important ways
- OR: Three OTHER cases you initially eliminated taxonomically DO fit when you understand the complete system

## Troubleshooting Your Own Thinking

The frameworks give you diagnostic tools when you're stuck:

**"I'm overwhelmed by too many cases"** → You probably skipped taxonomic elimination. Go back and categorize systematically to reduce noise.

**"I keep finding patterns that don't hold up"** → You're stuck in typological thinking without ontological validation. Map the complete behavioral system to test if it's coherent.

**"I think cases are linked but can't explain why"** → You haven't completed the ontological analysis. Map how target selection → approach → entry → behavior → exit → disposal all work as a system.

## Why These Frameworks Matter

**For New Analysts:** Instead of hoping intuition develops over years, you have a systematic approach from day one. You can practice each mode deliberately.

**For Experienced Analysts:** You can finally articulate what you've been doing unconsciously. You can teach others instead of saying "you'll get it eventually."

**For Supervisors:** You can evaluate the quality of analytical reasoning, not just conclusions. When someone says "I linked these cases," you can ask: "Walk me through your taxonomic, typological, and ontological analysis."

**For the Profession:** We move from "pattern recognition is more art than science" to having a teachable, systematic methodology.

## Elements of Crime Patterns: The Foundational Text

The first step is to know what these three frameworks are. Understanding *how* to apply them to specific crime pattern types is where the real work begins. **Elements of Crime Patterns** (Routledge, April 2026) provides the foundational knowledge needed to effectively employ taxonomic, typological, and ontological thinking in crime pattern recognition:

## What the Book Provides:

**Systematic Pattern Exposure:** The book presents diverse crime patterns with detailed behavioral elements, helping analysts build the mental database necessary for Recognition-Primed Decision Making.<sup>1</sup> This approach pre-loads your brain with patterns to recognize.

**Framework Application:** While this guide introduces the cognitive frameworks, *Elements of Crime Patterns* shows how they can be applied across different pattern types—from burglary series to human trafficking patterns.

**Methodological Foundation:** The book addresses the documented gaps in crime analysis research, particularly around systematic approaches to pattern identification. It provides the "how" that's missing from most training.

**Professional Knowledge:** As the crime analysis profession continues to define itself and standardize best practices, *Elements of Crime Patterns* documents the analytical methodology that experienced analysts use but rarely articulate.

## How It Connects:

The three cognitive frameworks—taxonomic, typological, and ontological thinking—provide the *structure* for how your brain processes information. *Elements of Crime Patterns* provides the *content* and *context* for applying that structure to actual crime pattern work.

Think of it this way:

- **This guide** teaches you *how to think*
- **Elements of Crime Patterns** teaches you *what to think about*

Together, they transform pattern recognition from mysterious art to systematic craft.

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<sup>1</sup> Recognition-Primed Decision Making (RPD) is a model explaining how experienced professionals make rapid, effective decisions in complex situations by matching patterns to past experiences, quickly generating a plausible option, and mentally simulating its outcome, selecting the first workable choice without extensive analytical comparison. Developed by Gary Klein and colleagues, it's used in fields like firefighting, military, and medicine to leverage intuition born from deep expertise under time pressure. See: <https://www.shadowboxtraining.com/news/2025/06/17/a-primer-on-recognition-primed-decision-making-rpd/>

## Quick Reference Guide

Use this checklist for your next pattern analysis:

### □ TAXONOMIC PHASE

- Have I sorted incidents by clearly defined categories?
- Have I eliminated obvious non-matches?
- Have I reduced the dataset to manageable size?

### □ TYPOLOGICAL PHASE

- Have I identified recurring behavioral elements?
- Have I looked for similarities across taxonomic boundaries?
- Have I developed specific linkage criteria?
- Have I created competing hypotheses for groupings?

### □ ONTOLOGICAL PHASE

- Have I mapped the complete behavioral system?
- Do I understand the relationships between all elements?
- Can I explain WHY these elements cluster together?
- Does this pattern make sense as a coherent system?

### □ VALIDATION

- Can I articulate my reasoning at each phase?
- Have I tested alternative explanations?
- Would another analyst using this framework reach similar conclusions?

## Where to Go From Here

### Immediate Action:

1. Take your next pattern analysis task
2. Consciously apply taxonomic → typological → ontological thinking
3. Notice which mode comes naturally and which needs practice

### Professional Development:

- Practice each framework separately until it becomes intuitive
- Teach these frameworks to colleagues and discuss how they experience them

- Document cases where the frameworks helped you find (or eliminate) patterns

### Further Learning:

- *Elements of Crime Patterns* (Routledge) for comprehensive pattern methodology
- Share your experiences with these frameworks in your professional community

### The Bottom Line

Pattern recognition isn't mysterious. It's the systematic application of three cognitive frameworks:

1. **Taxonomic thinking** eliminates noise
2. **Typological thinking** identifies behavioral signatures
3. **Ontological thinking** validates complete systems

When you can name these frameworks, you can use them deliberately. When you use them deliberately, you can teach them to others. When you can teach them, you professionalize the craft.

**Stop saying "I just had a feeling." Start saying "I applied taxonomic, typological, and ontological analysis."**

That's not just more professional—it's more accurate to what your brain is actually doing.

### About This Guide

This guide introduces cognitive frameworks for crime pattern recognition based on systematic analytical methodology. For more comprehensive coverage of crime pattern analysis, including specific pattern types, case examples, and advanced techniques, see *Elements of Crime Patterns* (Routledge).

**Questions or feedback?** Connect on LinkedIn and share how you're applying these frameworks in your work.

*"The difference between unconscious competence and teachable expertise is having the language to describe what you're doing."*