

Criminal Investigation

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INTRODUCTION

Police investigations can inspire fear, awe, security, suspense, and mystery. They have been the subject of countless novels, innumerable movies and too many television plots. For many, police work is virtually synonymous with investigations. But despite our fascination with the subject, most of what we know comes from detective experience and literary and media myths. Over the past 20 years, research has begun to shed some light on investigations, illuminating general shapes. We are now beginning to see some of the detail as further research focuses more closely on earlier findings.

Still, the commonly held picture of detectives' work is that it involves sleuthing out clues in sordid underworld dens, deductive reasoning based on speedy and accurate lab work and intuition, and nearly always apprehending the criminal. Yet early research showed that detective work is often boring, usually requires only normal decision-making powers, and seldom leads to solutions. The reason for these findings is that most crimes betray scant leads. The early research and the public myth are equally interesting and may be equally misleading. More recent research has shown that investigative work is neither as inspiring as the public may believe nor as fruitless as the first research suggested.

Early research on police investigations addressed the issues of detective effectiveness and productivity. It focused on the question: Does detective investigative work help solve crimes? This is also the question addressed in this chapter. Two rival hypotheses attempt to answer the question, each plausible and each based on some evidence. We will review these hypothe-

ses and their supporting evidence and then suggest a third hypothesis which more accurately fits the data.

This chapter concentrates on reactive investigations of crimes. These are investigations that begin when a citizen reports an offense against a victim. Most information describing reactive investigations comes from studies of burglary and robbery investigations. Thus, generalizing findings to all reactive investigations may be problematic. Police officers also engage in proactive or police-initiated investigations of criminals. These types of investigations are common to vice and drug enforcement, but they are not the subject of this chapter.

Before we address the main question, we will describe the investigative process. Once we have set the stage, we will move on to the main question.

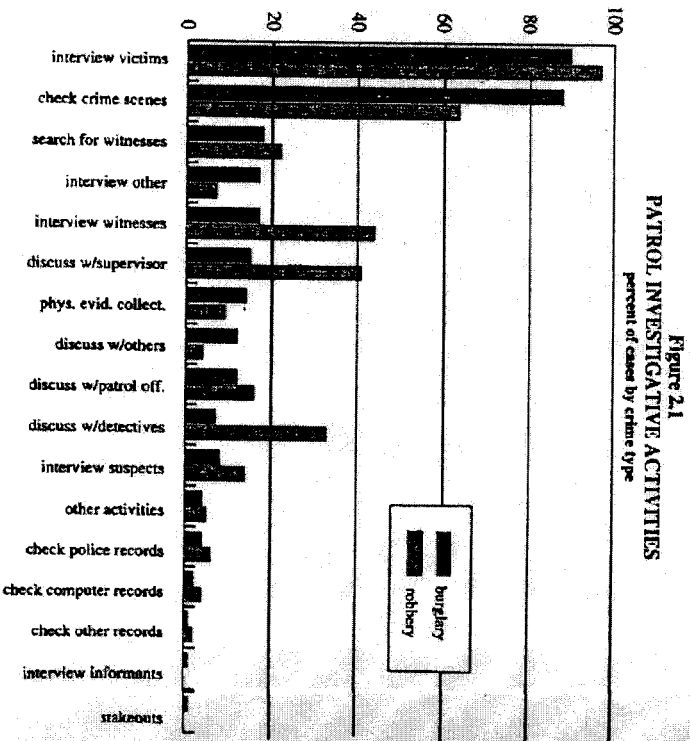
THE INVESTIGATIVE PROCESS

Larger police agencies in the United States usually divide the investigative function between a patrol division and an investigative division. However, other units such as records, communications, administration, and special services also contribute to investigations. Because investigative units are the only portion of most police agencies that are almost totally devoted to investigative work, detectives are central to the investigative function. The patrol division is the single biggest component of any full-service law enforcement agency, comprising almost 50 percent of the officers. But patrol officers spend much of their time on non-crime-related activities. Investigative units include only 10 percent of the typical agency's officers, but the detectives in these units are almost totally engaged in investigative or related activities (Police Executive Research Forum, 1981).

Until recently, the role of patrol officers in investigations was to serve as report takers. They took statements from victims to establish that a crime occurred, but did little other probing. After they took a report the case was given to a detective for completion of the investigative work. In some agencies (and it is impossible to determine how many) patrol officers still have only such a limited role in investigations. This is changing, however, as police agencies assign more investigative duties, for a wider variety of offenses, to patrol officers. In many agencies, patrol officers investigate all misdemeanors. In other agencies patrol officers handle investigations of felonies such as burglary and larceny. But even in agencies where patrol officers have a major role in investigating offenses, detectives still handle the most serious and complex cases.

Still, most large police agencies split the responsibility for the investigation of felonies between the patrol and detective divisions. The patrol officer handles the initial stage of the investigation, often called the preliminary investigation. Detectives handle any further, follow-up investigation.

Figure 2.1 shows the types of activities patrol officers engage in during preliminary investigations of burglaries and robberies. This information comes from logs completed by patrol officers in three police agencies—the Dekalb County (GA) Police Department, the St. Petersburg (FL) Police Department, and the Wichita (KS) Police Department (Eck, 1983). Later we will say more about the study that collected this information. Figure 2.1 shows that interviewing victims and checking crime scenes are the two most common activities, performed in over 90 percent of the cases. Patrol officers take all other actions in less than half the cases.



Preliminary investigation for burglaries seems to be largely a matter of report taking. Officers interview victims and check the crime scenes in virtually all burglaries. But they infrequently search for and talk to witnesses, check files, talk to informants, or interview suspects. This pattern of activities may be because other activities are often inappropriate. Burglary is normally a crime of stealth. Burglars seek to avoid being detected by victims and witnesses. Therefore officers usually have few clues upon which to base an investigation.

Robbers are more blatant. By definition, the offender and the victim must interact. Though this does not guarantee that the victim is a witness—an elderly woman who has been knocked down from behind and has had her purse taken may have seen nothing of the attacker—it does increase the chances that the victim will be able to describe the offender. Further, robberies occurring in public settings, like the holdup of a convenience store or the mugging in a parking lot, are more likely to be witnessed by third parties than burglaries.

So it is not surprising that robberies are handled a bit differently than burglaries. Officers are more likely to interview witnesses in robbery investigations, and patrol officers are more likely to discuss robbery cases with supervisors, detectives, and other patrol officers than burglary cases.

Once a patrol officer has completed a preliminary investigation, someone needs to decide whether to continue the investigation. In the past, the absence of a police policy left this decision to the detective who received the case. The absence of a policy also meant that detectives followed no formal criteria when making this decision. Over the past decade, police agencies have increasingly adopted formal case screening rules. By 1981, over 83 percent of the agencies serving 50,000 or more people used some form of case screening (Police Executive Research Forum, 1981).

Police agencies use a variety of screening procedures. Some agencies provide guidelines for patrol officers or patrol supervisors to use when screening cases. A more common method is to have case screening conducted by an investigative supervisor. Guidelines tell the supervisor which cases they should assign to detectives and which cases should not receive any further investigative effort.

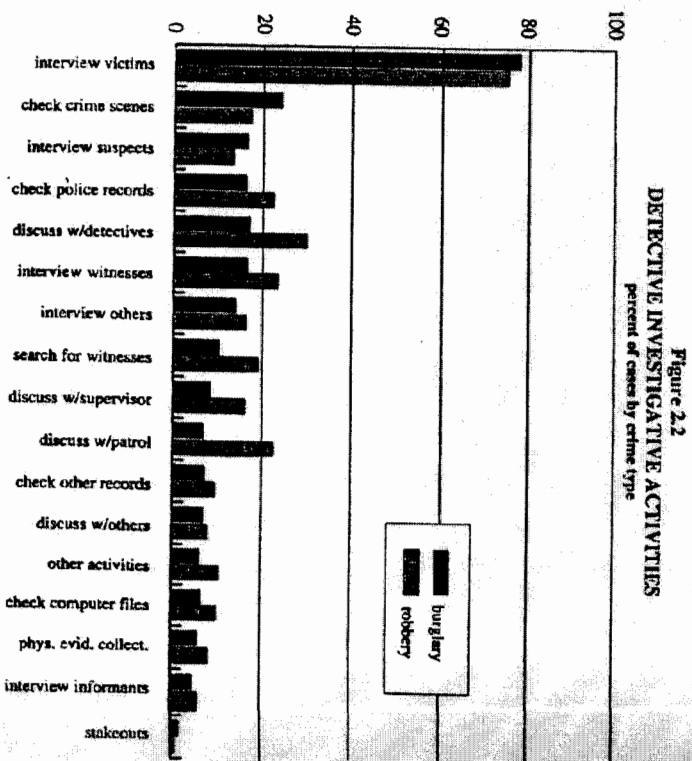
The case screening guidelines also vary. Some agencies only suggest the clues the screener should take into account when making such decisions. These guidelines allow a great deal of discretion. Others are statistically derived lists of clues with numerical weights that allow little discretion. These clues include information that may result in suspect identification and arrest, describe crime seriousness, or specify the crime type (Eck, 1979; Gaines et al., 1983).

Few researchers have described what detectives do during investigations. Greenwood et al. (1977) demonstrated that detective actions relating to the solution of crimes are most often standard police procedures and not the strange and fantastic actions of the detective mythology. Although true, Greenwood et al. only looked at solved crimes. Since detectives solve few crimes their study provided a distorted picture of the importance of the actions taken by detectives.

Figure 2.2 shows the frequency of actions taken by detectives during follow-up investigations of burglaries and robberies. The information came from logs completed by detectives investigating these offenses at three juris-

dictions (Eck, 1983). The most common activity is the victim interview. No other activity is particularly common. This suggests that the pattern of activities conducted by detectives varies from offense to offense, depending on the nature of the leads available. Though burglary and robbery follow-up investigations display similar activity patterns, almost all detective activities are more common for robberies than burglaries.

Since cases have varying numbers of clues, investigations are not all the same length. Above, we discussed how case screening is used to curtail investigations. But even if a case is assigned to a detective, it may not remain active for very long. Promising leads do not always pan out. Alternatively, a suspect identified to the patrol officer may be arrested a few days later by a detective.



As Figure 2.3 demonstrates, the vast majority of investigations of burglaries and robberies are over by the third investigation day (after a day for the preliminary investigation, and two days for the follow-up). Almost half of the burglaries have been screened out by the second investigation day. Since none of the three agencies screened robberies, all were being actively investigated by the second investigation day when the follow-up began. Nevertheless, by day three the proportion of robberies still being investigated is only slightly higher than the proportion of active burglary cases. On subsequent investigation days the difference narrows still further. This rapid attrition of cases is consistent with the findings of Bynum et al. (1982) that detectives did not put much effort into 82 percent of the cases they handled.

Indeed, when we organized these actions by the investigation day on which they occurred we found that the longer the investigations were active, the more diverse the actions became. On the first follow-up investigation day, victim interviews and crime scene checks predominated. The focus of the investigation at this early stage is on information sources outside departmental control, such as victims, witnesses, and crime scenes. By the third and later follow-up investigation days, there is no action that predominates. The detectives direct the most frequent activities at information sources within departmental control, such as records, other detectives, patrol officers, and suspects (Eck, 1983).

Investigations become less victim-oriented and more suspect-oriented as time passes. The proportion of active cases involving a victim interview during an investigation day declines, as the proportion of cases involving a suspect interview increases. This process, illustrated in Figures 2.4 and 2.5, is in part due to the attrition of cases (profiled in Figure 2.3) with exhausted leads. This also occurs because the leads in the remaining, more promising cases force detectives to take a variety of actions. These leads point to suspects, so investigative actions, while becoming more diverse, also become more suspect-oriented. Sources of information within the control of the department become more important as detectives check early leads. Victims become less important (unless they actually witnessed the offense) because they have little to contribute after detectives have interviewed them early in the investigation. Thus, we can draw a portrait of how investigations progress, despite the absence of a typical pattern of specific actions.

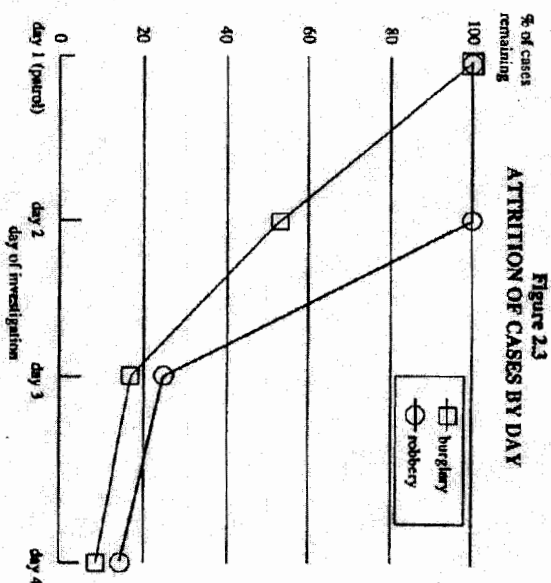


Figure 2.4
ACTIVITIES BY DAY OF INVESTIGATION
OF BURGLARIES

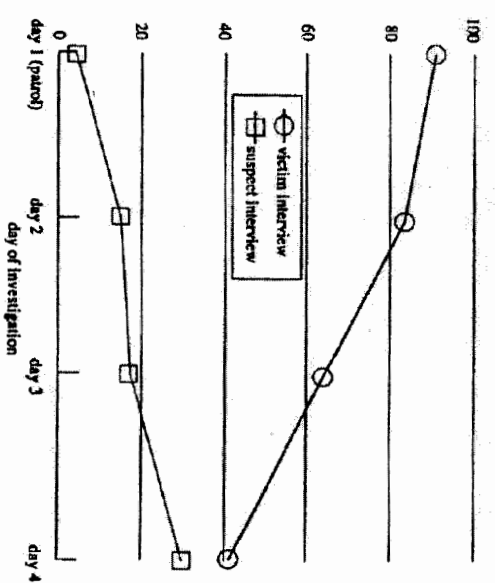
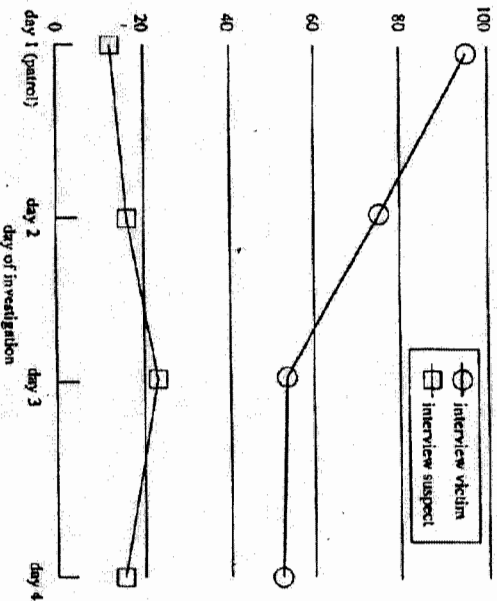


Figure 2.5
ACTIVITIES BY DAY OF INVESTIGATION
OF ROBBERIES
% of cases
with activity



SOLVING CRIMES

Does all of this effort make a difference? Researchers have paid considerable attention to the productivity of investigations. They have been particularly concerned with how investigators solve crimes and the relative contributions of patrol officers and detectives. Based on earlier research, two apparently contradictory hypotheses can be discerned.

The first suggests that investigative results, such as arrests, are beyond police control. Random circumstances—the presence of a witness, whether the victim had marked his stolen property, the presence of physical evidence, and the ability of the victim to identify a suspect—dictate case outcomes. If the circumstances are not favorable, then an investigator cannot make an arrest. Under favorable circumstances, an investigator can make an arrest. The role of the patrol officer is critical because he or she determines whether the necessary leads are present and, as a consequence, whether conditions are favorable for an arrest. Detectives process the case and com-

plete the paper work. They pick up and interrogate suspects identified during preliminary investigations and prepare cases for prosecution. Little investigative work (in the normal meaning of the term) is performed. Peter Greenwood has been the most articulate spokesman for this *circumstance-result* hypothesis.

[The] solution of any particular properly crime is a chance event, insensitive to the amount of investigation conducted (Greenwood, 1970:37).

On how cases are solved: The single most important determinant of whether or not a case will be solved is the information the victim supplies to the immediately responding patrol officer. If information that uniquely identifies the perpetrator is not presented at the time the crime is reported, the perpetrator, by and large, will not be subsequently identified (Greenwood & Petersilia, 1975:vi).

Studies by Isaacs (1967), Greenwood (1970), Greenwood et al. (1977), Eck (1979), and Gaines et al. (1983) support the circumstance-result hypothesis. Among police researchers, during the past decade, this description of how crimes are solved has become the dominant hypothesis.

The evidence supporting it is not conclusive, however. Isaacs (1967) used highly aggregated data, comprised of many offenses. Further, he did not measure the effort of investigators, nor did he describe what they did to solve offenses. Greenwood (1970) used precinct-level data. Though he separately analyzed burglaries and assaults, he did not collect information on case characteristics and investigators' efforts. The study by Greenwood et al. (1977) looked at cleared cases only. This made it impossible to determine the factors that discriminate between cases that did and did not result in an arrest. Finally, Greenberg et al. (1973), Greenberg et al. (1975), Eck (1979), and Gaines et al. (1983) did not collect data on what detectives did after the preliminary investigation. As a result, none of the studies supporting the circumstance-result hypothesis give a complete picture of the investigation process. Thus, they are incapable of describing the effectiveness of detectives, in absolute terms or relative to patrol officers.

In direct contrast stands the *effort-result hypothesis*. According to this explanation, the investigative work of patrol officers and detectives contributes substantially to crime solution. Looking for witnesses, interviewing victims, checking records, cultivating informants, and other activities are

efforts that increase the chances that an investigator may solve the crime. Initial leads spur investigative actions which can produce further leads and arrests. Though factors outside police control play a role, the effort-result hypothesis asserts that police actions substantially contribute to successful investigations.

Although it is supported more by public myth than by evidence, this hypothesis is also plausible and is not devoid of support from researchers. Both Ward (1971) and Folk (1971) suggest such a description in their studies. However, their research takes the effort-result hypothesis for granted, and they make no attempt to test its validity. In fact, until the late 1970s researchers had not tested the effort-result hypothesis. At most it had the support of common sense, but this was not scientific evidence. Even less support existed for this hypothesis than its rival.

In 1979, the Police Executive Research Forum began a study designed to describe how investigations are conducted (Eck, 1983). We used logs completed by patrol officers and detectives, official reports, and observations of investigators at work to describe the investigative process in three jurisdictions (DeKalb County, Georgia; St. Petersburg, Florida; and Wichita, Kansas). Investigators completed one log for each day a case was actually worked (a "case-day"). Our data describing actions taken by patrol officers and detectives investigating burglaries and robberies was shown earlier in Figures 2.1 through 2.5. We also documented the information produced by these actions, and the results of this investigative effort. Because we collected data on individual cases we acquired a detailed account of how patrol officers and detectives conduct burglary and robbery investigations from the preliminary investigation through an arrest or suspension of investigative effort.

With this set of data, we were able to avoid the three problems of earlier studies. We could control for the efforts of investigators and for case characteristics, and we could make comparisons between solved and unsolved cases. We could, therefore, test both the circumstance-result and effort-result hypotheses.

To test these two hypotheses, we analyzed only cases assigned to detectives for follow-up work. We used a multivariate procedure, logistic function analysis, suitable for a dependent variable with only two values (arrest and no arrest) to determine if detective effort increased the probability of arrests for burglaries and robberies. We controlled for information collected by patrol officers during the preliminary investigation. This allowed us to see if detective effort added to the chances of an arrest.

Detective effort was measured in two ways in two separate analyses.

First, we used the various actions taken by detectives—such as interviewing victims and witnesses, checking files, and interrogating informants and suspects—as effort measures. Second, we used information obtained by detectives—such as suspect name, suspect description, or link to another crime—to measure detectives' contributions.

If the circumstance-result hypothesis was correct, then information collected by patrol officers would be the only significant contributor to arrest. Neither the actions conducted by detectives nor the information they gained as a result of these actions would matter. If the effort-result hypothesis was correct, then the actions conducted by detectives and/or the information these actions produced would be significant contributors to arrests. Information collected by patrol officers would have little or no contribution to crime solution.

Table 2.1 shows the results of the analysis for the contribution of detective actions to the probability of arrest when we controlled for information from preliminary investigations. Four findings are immediately discernible:

At least one piece of information from the preliminary investigation is significant in all three jurisdictions;

Some activities of detectives are significant in each of the jurisdictions;

Detective interviews of victims are not significant in any of the three agencies; and

The importance of follow-up investigation activities (as measured by the number of significant activities) varies by jurisdiction.

The results are ambiguous. Preliminary investigation information is significant, thus supporting the circumstance-result hypothesis. Follow-up investigation actions are significant, thus supporting the effort-result hypothesis. Interestingly, Wichita, which organized its patrol officers and detectives into teams, had the greatest number of significant patrol activities. This result is consistent with previous research on the effects of increasing patrol involvement in investigations (Bloch & Bell, 1976). But even in this agency, detective activities were important for increasing the probability of arrests.

Table 2.1
Analysis of Follow-Up Investigation Activities
 (Coefficients with Standard Errors in Parentheses)

CONSTANT	DeKalb Co.	St. Petersburg	Wichita
	-3.22(0.53)**	-2.40(0.69)**	-4.34(0.63)**
PRELIMINARY INVESTIGATION INFORMATION			
Witness	0.35(0.36)	1.38(0.95)**	0.99(0.53)
Suspect Information	-0.11(0.36)	-1.18(0.97)	1.27(0.42)**
Vehicle Description	-0.39(0.40)	-0.06(1.16)	1.43(0.51)**
Latent Prints	0.00(0.35)	0.18(0.62)	0.86(0.38)**
Related Offenses*	0.95(0.48)**		1.36(0.57)**
Range of Time of Occurrence	0.00(0.07)	0.20(0.12)**	0.03(0.13)
FOLLOW-UP INVESTIGATION ACTIVITIES			
Victim Interview	-0.71(0.49)	-1.27(0.67)	0.34(0.49)
Witness Interview	1.03(0.29)**	0.00(0.56)	0.86(0.48)**
Informant Interview*	1.37(0.35)**		
Other Interview	0.89(0.28)	0.50(0.60)	0.39(0.49)
Discussion with Dept. Member	1.08(0.30)**	1.02(0.50)**	-0.03(0.45)
Record & File Checks	0.81(0.29)**	1.23(0.51)**	0.64(0.42)**
Cases	849	212	597
R-square	19.8	8.9	13.5
Chi Square	132.48	18.10	52.47

* Insufficient data to test in all agencies.

** Significantly different from zero at .10 level of significance using a one-tailed t-test. A two-tailed t-test was used for the constant.

Follow-up investigator actions are a measure of investigative effort, but detectives conduct these actions to gain information. Therefore, we analyzed follow-up investigation information in the hopes that the results would be clearer. Table 2.2 shows the analysis results for the influence of follow-up investigation information on the probability of arrest controlling for preliminary investigation information. Two findings are evident:

At least one piece of information from the preliminary investigation is significant in all three jurisdictions; and

Suspect name and related crime information obtained by detectives is significant in all three jurisdictions.

Table 2.2
Analysis of Follow-Up Investigation Information
 (Coefficients with Standard Errors in Parentheses)

CONSTANT	DeKalb Co.	St. Petersburg	Wichita
	-5.00(0.49)**	-3.66(0.66)**	-4.54(0.53)**
PRELIMINARY INVESTIGATION INFORMATION			
Witness	0.95(0.37)**	0.70(1.04)	-1.06(0.56)
Suspect Information	-0.54(0.36)	-0.91(1.06)	0.86(0.43)**
Vehicle Description	-0.43(0.45)	0.31(1.27)	1.66(0.54)**
Latent Prints	0.22(0.36)	0.50(0.73)	0.67(0.39)**
Related Offenses*	0.75(0.48)**		1.17(0.63)**
Range of Time of Occurrence	0.05(0.07)	0.40(0.15)**	0.05(0.13)

DETECTIVE FOLLOW-UP INFORMATION

Suspect Name	2.82(0.44)**	2.24(0.69)**	1.60(0.42)**
Suspect Description	0.85(0.32)	-0.26(0.64)	-0.39(0.43)
Vehicle Description	0.42(0.34)	-0.17(0.76)	0.66(0.53)
Related Crimes	0.82(0.28)**	2.18(0.59)**	1.29(0.48)**
Cases	849	212	597
R-square	23.1	25.2	18.6
Chi Square	168.41	46.63	72.47

* Insufficient data to test in all agencies.

** Significantly different from zero at .10 level of significance using a one-tailed t-test. A two-tailed t-test was used for the constant.

Again the results are ambiguous. Maybe both hypotheses have some validity.

Although the data support both hypotheses, neither offers a complete description of the investigative process. Further, the two hypotheses are apparently contradictory. What is needed is a hypothesis that combines elements of both hypotheses and removes these contradictions. The *triage hypothesis* is such a hypothesis.

The triage hypothesis removes the contradiction by differentiating among types of cases. According to this hypothesis, the investigative process *implicitly* works to divide cases into three groups. These groups are:

1. Cases that *cannot* be solved with a reasonable amount of investigative effort;
2. Cases *solved by circumstances*, which only require that the suspects be arrested, booked, interrogated, and a prosecutable case prepared; and,

3. Cases that *may* be solved if a reasonable level of investigative effort is applied to them, but will not be solved otherwise.

This is an implicit process because police agencies do not have policies (with one possible exception) to promote such a division. Instead, detectives, using their experience, create this division without setting out to do so. The one exception is case screening before cases are assigned to detectives.

The differences among these three groups are not as distinct as we have suggested. In fact, it may be more useful for us to think of these three groups as representing ranges of cases on a continuum. Still, the triage hypothesis makes it clear that we must differentiate between cases of the same crime type based on the level of investigative effort required to solve them. Group 1 cases require a great deal of effort, perhaps an infinite amount of effort, to solve. Group 2 cases required very little investigative effort to solve, though post-arrest, processing efforts may be time-consuming. Group 3 cases fall into the middle range of investigative effort.

We can view the circumstance-result and effort-result hypotheses as special cases of the triage hypothesis. The circumstance-result hypothesis focuses on differences between group 1 and group 2 cases. The effort-result hypothesis focuses on differences between group 1 and group 3 cases.

The answer to the question, "Do detectives solve crimes?" is a qualified "yes." Detective work contributes to the solution of group 3 cases. But it does nothing for group 1 cases and little for group 2 cases. Circumstances beyond police control do have some influence and so do the efforts of investigators. In the three agencies we looked at, detectives made arrests in five to ten percent of the burglaries and robberies that did not have a named suspect when the cases were assigned to them. From 10 to 17 percent of the same cases resulted in detectives interviewing a suspect, even though they may not have arrested the suspect later. These are not large numbers but they are important. Though detectives may not be as omnipotent as the public myth (and some detectives) would have us believe, detectives are not as unproductive as earlier research had suggested.

IMPLICATIONS

The triage hypothesis allows us to draw distinctions among law enforcement agencies. Agencies with few resources, poorly trained, led, and motivated investigators, or having a low priority on investigations may implicitly assign more cases to group 1 at the expense of cases in group 3. For these agencies, group 2 cases will make up the majority of solved cases. Agencies with many investigative resources, well-trained, led, and motivated investigators, or with a high priority on investigations may do the opposite. In these agencies, cases that most other agencies would put in group 1, are implicitly assigned to group 3. So a greater proportion of solved cases may belong to this last group. Comparative agency studies are

needed to determine how these organizational factors influence how investigators solve cases. This type of research would permit the development of performance measures for agencies and could lead to improvements in investigative effectiveness.

Differences in investigative strategies, tactics, and procedures may also influence the relative sizes of these groups. Agencies whose patrol officers conduct thorough preliminary investigations, have well-organized and accessible records, search for witnesses, and collect and process physical evidence may have a greater proportion of group 2 and group 3 cases than agencies that do not. Studies to assess the impact of these differences would be useful for confirming the triage hypothesis.

The question, "How many detectives are needed to effectively work a caseload of a given size," has received scant attention though such research can be valuable for making resource allocation decisions. Greenwood (1970) found no relationship between arrests and cases per detective for burglaries, but found a negative relationship for assaults. However, he did not distinguish between burglaries and assaults that detectives actually investigated (group 3 cases) and those that received only cursory treatment (group 1 and 2 cases). Thus, he overestimated the actual workload of detectives. Research on investigative caseloads should address the question, "What is the number of group 3 cases detectives can effectively work?"

Practitioners and researchers have usually been careful to distinguish among types of offenses (burglary, robbery, rape, homicide, larceny) but have paid little attention to differences in investigation difficulty. As suggested by the triage hypothesis, distinctions based on difficulty are critical for understanding how investigators work cases. Using offense types as a measure of case difficulty is meaningless because case difficulty can vary widely within these broad categories. Practitioners and researchers need to develop and refine investigative difficulty scales for use in performance measurement. Some early efforts have been made in this direction (Eck, 1983; Cohen & Chaiken, 1987).

The triage hypothesis opens up a number of management and research possibilities that could improve the functioning of investigations units. However, investigations seem to be a low payoff endeavor under even the best of circumstances. Therefore, it is unlikely that improvements in the way investigations are conducted or managed will have a dramatic effect on crime or criminal justice.

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