Innovations in Policing:

A Test of Three Different Methodologies for Identifying Important Innovations in a Substantive Field

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1.0 Introduction:

In the private sector, innovation is now commonly seen as the key to success -- not only for individual companies, but, indeed, for the entire economy.[1] More recently, as government has sought to address chronic and emergent social problems with newly constrained tax revenues, innovation has come to be seen as essential in the public sector as well.[2]

1 value of innovation in the private sector
2 importance of innovation in the public sector

Indeed, enthusiasm for innovation has become something of a cult -- so much so that it has come to be viewed as an end in itself. Managers not committed to innovation are condemned for lack of energy and imagination. Administrative systems that focus organizational efforts on traditional tasks and methods are criticized for their stifling effects. And so on.

What this ardent enthusiasm for innovation ignores, however, is that many innovations must fail. By definition, innovations are experiments whose results are unknown until they occur. Not all experiments can succeed. The failures will cost something in terms of wasted resources, or degraded services compared to what would have been available through the traditional methods.

Of course, the failed experiments may be valuable in that they teach us some important lessons about what can and cannot work. Or, they may help to establish a tradition of experimentation and innovation that will, over time, produce more successes than failures. But in the short run, some innovations must fail.

In studying innovation, then, it is important to distinguish between those that succeed and those that do not. That distinction is vital in deciding which innovations

are worth replicating. It is also important to studies of how innovations diffuse throughout society, for diffusion processes should be evaluated not only in terms of how widely and how quickly they diffuse innovations, but also in how reliably they discriminate between good and bad innovations. The distinction is important in studying intra-organizational processes of innovation, since these processes, too, must be evaluated not only in terms of their ability to induce innovation, but also to discriminate between good and bad.

1.1. Defining Successful Innovations

The difficulty with making this distinction, of course, has been in establishing any objective definition of success. The problem is partly conceptual. It is surprisingly difficult to define what is meant by a successful innovation even if one relieves oneself of the burden of making it operational.[3]

The natural starting place is to define a successful innovation as something that "works better" than what previously existed; i.e. an operational program or methodology that uses less resources, produces a higher quality result, or operates more reliably across more heterogeneous cases than anything previously employed.[4]

3 Leonard, What makes innovations important
4 Use of operational utility as a criterion for successful innovation

These tests are the ones most commonly used by the "program evaluation" community. These are also the tests of innovations that are proposed by those who hold a "research and development" view of innovation that sees innovative processes within a field as a search for well-defined operational programs that can be shown to work, and then routinely replicated across the field.[5]

This criterion is surely one important attribute of a successful innovation. But evaluating innovations exclusively in these terms ignores other potentially valuable features of an innovation.

Sometimes innovations are important not because they work and can be replicated, but because they fail in interesting ways that point towards more effective innovations in the future. For example, when the use of robbery stake-out squads resulted in the police fatally shooting a large number of robbery suspects, the idea that robberies could best be handled by finding ways to thwart them while in progress yielded to the idea that they could best be prevented by hardening the common targets of robbers, or by apprehending particularly active robbers at times other than when they were committing robberies.[6]

5 Abt, Social R and D
6 Evolution of theories for dealing with robbery -- from stakeout squads to other approaches

Or, an innovation might be important not because they achieved an old purpose better, but because they re-defined purposes and objectives. For example, methadone maintenance programs helped re-define the objectives of drug treatment from achieving abstinence from drug use to using drugs in much less destructive ways.[7] Similarly, an innovative program in San Diego re-created Single Room Occupancy hotels, once viewed as problems for local communities, as the solution to the problem of homelessness in San Diego.[8] In effect, these programs solved social problems by introducing relatively benign forms of the problem they were supposed to solve. Such solutions were not within the mandate or imagination of any particular public sector organization that then had responsibility for working on the problem.

Still other times, innovations are valuable because they suggest some new idea about either ends or means through some process of analogous reasoning. For example, an innovative program called "One Church, One Child" solved the problem of finding foster homes for a burgeoning list of black children awaiting adoption in Illinois by mobilizing black churches to join the Department of Public Welfare in finding such parents.[9] These efforts revealed to many other public sector entrepreneurs the potential value of working

7 Methadone maintenance and its re-definition of the objectives of drug treatment

8 Single Room Occupancy Hotels in San Diego, Building the Baltic

9 One Church, One Child

with established community organizations to solve social problems. It also, incidentally, showed up the weakness of many public sector organizations in establishing successful operational links with communities that could help them solve the problems they faced.

Finally, innovations may be important not because of the particular idea they represent, but because of the experience they produce for individuals who participate in the innovation, or for organizations that begin innovating. It is commonly observed that such experiences "open up" organizations: they help people in the organization imagine that the ends and means of the organization could be different than they now are; and they help to encourage the organization to seek advice and guidance from outside the organization as well as inside.[10] The consequences, of course, are that the set of possibilities available to the organization widen. This, in turn, increases the flexibility of an organization. And that may be valuable if the organization is positioned in an environment where flexibility is useful.

For convenience, we could give these different attributes of success in an innovation different names. The first might be called "operational utility or value." A second might be called "indirect operational utility or value." The third might be called "organizational

10 Impact of innovations on opening up organizations

development utility." Note that the second and third attributes are not valuable now in themselves; they are valuable only in the future, and then only probabilistically. So, it is not hard to understand why a hard-nosed program evaluator would want to see operational success before announcing that a particular innovation was a valuable one. Nor is it hard to understand why he or she would be properly skeptical of any claims of value or utility that were not directly linked to operational results.

To those who study professional fields or organizations over longer periods of time, however, and who tend to see success in terms of long run evolutions and adaptations rather than immediate, operational accomplishments, it is far easier to see value in the second and third feataures of innovations. Indeed, they would view these indirect or organizational effects as potentially more significant than the immediate concrete successes.

1.2. Defining Success Empirically

Even if one could resolve the conceptual problem, one would still face the operational problem of deciding whether any particular innovation did or did not have these qualities. Only a few innovations can be reviewed objectively. The more complex stories about indirect or

organizational effects are very hard to investigate and establish. Thus, if one wants to identify the successful or important innovations in a field, one is inevitably thrown back on much cruder methods. Three such methods come to mind.

The most straightforward is to conduct a survey of practitioners in the field. The survey would ask a broad, representative sample of practitioners to: 1) state their views about the most important innovations; 2) explain what made the innovations important; and 3) report whether they had adopted them in their own organizations.

The intuition behind this approach is that the practitioners in a field are in the best position to judge the utility of an innovation. If enough practitioners thought a particular idea was a good one, then that increased the likelihood that it was, in fact, an important innovation. Similarly, if many practitioners in the field had adopted a particular innovation, that, too, was an objective indication that the innovation was an important one; the idea was trusted enough to attract investment and commitment, not just lip service.

A worry about this approach is that it would identify "popular" innovations rather than "successful", or "valuable", or "important" innovations. Implicit in this

worry is the assumption that the judgments of representatative practitioners could not be trusted. Perhaps professional fields are occasionally swept by "fads" that nominate a particular innovation as important, but on close examination turned out not to be. Perhaps some innovations that will turn out to be important in the future are now largely unrecognized.

To the extent that one is concerned about the quality of the judgments rendered by ordinary practitioners, one could turn, instead, to the judgments of experts in the field. Thus, a second approach is to convene an "expert panel" whose wide knowledge, long experience, and proven judgment could be relied upon to produce more accurate judgments about what were important innovations. They could be asked the same questions asked of the field as a whole.

A concern with both the survey approach and the expert panel approach is that in both cases respondents would be asked to give judgments about something they might not have thought about: i.e. the significance of particular innovations in their field. To the extent that the concept of "innovations" was a new category of thought, or had a special meaning to some respondents and not to others, the reliability of their answers would be limited.

One way to deal with this problem would be to avoid asking for responses to questions about innovations entirely, and to try to find some other indirect measure of important innovations. One possibility here is to look for evidence of particular things that a researcher would define as innovations that were being widely discussed in the field. The fact that particular innovations were described in journals, or discussed in national meetings might indicate that they were important. Thus, a third method for empirically identifying important innovations in a substantive field is to identify the programs that were being discussed in important journals and conferences in the field.

Initially, we thought of these different approaches as competitors: that is, we were looking for the one method that would be preferred in identifying important innovations in a field. But as we worked on the problem, we came to see that the methods were complementary in two important respects.

First, each method could be used as a way of validating the results of the other. To the extent that the three methods produced similar results, that result would be strengthed, and in the future one might be entitled to use only one method rather than all three in defining important innovations.

Second, each method could be used to help construct some of the elements needed for each of the other methods to be most successful. For example, in constructing the survey, it seemed desireable to have both an open-ended segment (to make sure that the respondents could say what they thought was important) and a closed-ended segment (to facilitate their responses, increase response rates, and ensure that the results could numerically tabulated). Yet, it seemed unclear how we could create a closed-ended segment that nominated particular innovations for their attention, or particular criteria to be considered. The answer was that we could use the content analysis of journals and professional conferences to help us identify plausibly important innovations to be included on our list, and use the expert panel to help us identify both criteria and possible innovations to be included in the survey.

This suggests that the best approach to identifying important innovations may be to use combinations of these methods rather than to rely on any one exclusively. Ultimately, in presenting our substantive findings about what have been the most important innovations in the field, we will rely on the results of the combined methods. But in presenting our methodological conclusions, we will discuss the advantages and disadvantages of single as well as combined methodologies.

2.0. The Expert Panel

The first method we explored relied on interviews with a panel of experts. They were asked not only to identify the most important innovations of the past decade, but also to explain how they thought about the subject of innovations in policing, and how they formed their conclusions.

2.1. Hypothesized Strengths and Weaknesses

As a stand-alone method, we imagined that the expert panel would have some important advantages. First, it was relatively inexpensive, quick, and straightforward; It involved only twenty interviews lasting about an hour apiece.

Second, it had the advantage of relying more heavily on relatively expert opinion. As noted above, it is no easy task to assess the significance of a particular innovation. Ideally, one wants to know its immediate operational utility, its indirect operational effects, and its ability to challenge the field or the organization into which it is introduced. Some people have a broad enough perspective to make such judgments reliably; others do not. Unlike a survey of the field or an analysis of the contents of professional

journals, an expert panel would give more weight to those whose judgments about these complex matters could be trusted the most.

The method also had important features which could strengthen the other methods on which we were relying. For example, the experts could help us develop and refine the criteria that could be used to evaluate different kinds of innovation. They could also help us identify the innovations that ought to be listed in the structured part of the survey. Since the expert panel could strengthen the quality of the survey, it seemed sensible to begin our search for the most important innovations with this approach.

But there were some obvious weaknesses in this approach as well. Since we were relying extensively on the quality of the judgements rendered by this expert panel, and there were not very many of them, the method by which they would be chosen became very important. Some objective means for establishing their expertise was required. Moreover, since the results depended on extensive, somewhat open-ended interviews, we had to find some way of controlling for our personal relationships with many of the interviewees, and to ensure that we presented a consistent "stimulus" to our respondents. It was these weaknesses that our method of selection and interviewing were designed to minimize.

2.2. The Method: Selecting the Panel of Experts

In selecting the panel of experts, we were torn by two conflicting objectives. On the one hand, we wanted to enlist real expertise -- people whose judgments about the value of particular police innovations we could trust because we knew they had thought about this issue deeply and well, and had a broad base of experience and knowledge to rely on in reaching their conclusions. On the other hand, we did not want the group to be biased by our particular perspectives. If the only people who we judged to have expertise were the people who agreed with us, there was no reason to develop and interview the panel. We could simply interview one another!

The task, then, was to get qualified expertise, but to get it objectively. The method we chose was a compromise -- one that in retrospect seems to have tilted a little too much in favor of our own particular biases. We each took the responsibility of identifying 30-40 people from four different groups: sitting police chiefs, former police chiefs, police consultants, and academics who study the police. These people, in turn, would be asked to identify 20 individuals whose "judgment they would trust about the quality and importance of police innovations over the last decade."

The nominators were also sent a list identifying all the other nominators, and were asked to look over that last and see if anyone else should be included. If a person not on our list received a vote as a member of the expert panel, they were immediately added to our list of nominators and received a letter asking for their nominations.

In the end, we mailed 88 letters: 73 on our original list, and 15 more nominated by our nominees. We received 72 replies. We chose the top 21 vote getters as our expert panel since there seemed to be a clear break at 22 votes. We failed to interview one of these. Thus, our expert panel consisted of twenty subjects.

2.3. The Method: An Interview Protocol

We assumed that each interview with the expert panel would have its own coherence, and that we would end up adapting our approach to each particular interview. Nonetheless, we wanted to have a consistent approach to the interviewees, and to make it possible to look across the interviews we conducted. To meet these objectives, we developed an interview protocol to guide us through the individual interviews.

Our objectives for the interviews were simple: to identify the most important innovations of the last decade,

and to determine what, in the minds of the experts, made them important. Although we could have asked the panel members directly, this seemed a risky strategy. Panelists might overlook whole classes of innovations which they would consider important, but in which they had little personal interest.

To deal with these problems, we decided on an iterative strategy. We began by asking the experts to "categorize" innovations, partly so that we could know whether they had given any thought to the subject, and partly to alert us to the sorts of innovations in which they were particularly interested. The second step was to ask them for their initial views about what criteria were important in judging innovations -- partly to learn what those were, partly to bring these ideas to the forefront of their minds. In the third step, we presented our own categories of innovation both to broaden their initial conceptions of what counted as important innovations, and to test our own categories. The fourth step asked them to identify important innovations in each of several types of innovation. The fifth step asked them to decide which innovations they thought were most important.

2.4. Substantive Findings: Categories of Innovation

One of the important features of the interview protocol was distinguishing among four categories of innovation:

Technological Innovations: Those innovations that are built around or identical with some piece of capital investment or equipment such as cellular phones, body armor, or less than lethal weapons.

Programmatic or Operational Innovations: Those innovations that establish new ways of responding to particular problems or circumstances that the police encounter such as reliance on mandatory arrest policies in responding to domestic assaults, or the development of community-based, street level drug enforcement to deal with open-air drug markets.

Administrative Innovations: Those innovations that alter the organizational or administrative framework through which the police mobilize and deploy financial and human resources, develop new skills and capacities in their work force, exercise operational control over those resources, account for their use of resources, or evaluate their effectiveness.

Strategic Innovations: Those innovations that seek to change the fundamental nature of police work by changing the primary ends or goals of policing, or the primary means used to accomplish the goals, or the key external relationships on which the police rely for their support and legitimacy.

While the exact boundaries separating these different types of innovations remained somewhat obscure, our own work in the field, and our prior discussions with colleagues about the subject of innovation, had made it clear to us that it would be useful for us to set out these different types in the interests of ensuring that our respondents considered a wide set of innovations before deciding which were most important. We knew that some experts would be much more oriented to one kind of innovation than another, and we wanted to make sure that they thought about the others before selecting the most important. We also wanted to check on the reasonableness and prima facie validity of these distinctions.

In practice, these distinctions worked reasonably well. Only one person reproduced our analytic scheme exactly, and he was contaminated by lots of prior contact with us. Most of the distinctions the respondents made, however, did fall along one or more of the dimensions we were trying to distinguish. For example, 8 of the twenty

respondents broke out "technological" innovations as a distinct type. Similarly, 9 of the twenty clearly distinguished "administrative" or "management" innovations from "operational" or "programmatic" innovations.

Most interestingly, as many as 14 of the 20 respondents distinguished what might be thought of as "philosophical" or "strategic" innovations from other kinds. These words were used explicitly by about five respondents. Others used words like "cultural" or "frame-breaking" or "task re-defining" innovations to identify innovations that operated at a different level of significance than the more particular innovations identified by others as operational or administrative.

Indeed, for some respondents, these large innovations were the only innovations worth mentioning. The other kinds of innovations were all lumped together in the categories of "criminalistics" or "new methods for doing old jobs". For virtually all who made this distinction, the strategic innovations were judged most important, but also most problematic.

We interpret these responses as giving some support to the four-fold distinctions we want to make to help us discuss innovations in policing. Each of the categories we wanted to use was spontaneously mentioned by at least 8 of

our twenty subjects. Moreover, with two notable exceptions, our respondents'categories and distinctions lined up with ours. (The two that did not introduced wholly different distinctions. One respondent distinguished between "pro-active" and "re-active" innovations; a distinction that picks up a much different dimension than any of ours. Another denied that there had been any important innovations in policing, though he suggested an important strategic innovation of his own that would focus on on-going control of convicted offenders rather than either crime prevention or rehabilitation.) And virtually all respondents, when presented with our distinctions, were happy to work with this framework, and could give meaningful answers.

Whether these same distinctions would be as important in other fields remains unclear. We suspect that one of the reasons these distinctions work well in the field of policing is that they correspond to different eras of thought about what was necessary to improve policing.

At one time, the principal innovations that were thought necessary were those that would give police managers firmer administrative control over the police. Thus, for a long time, police reform was equated with such things as improved educational standards, better training programs, the establishment of written policies and procedures, and the use of sophisticated technology to support traditional

police operations such as patrol and criminal investigation.[11]

Somewhat later, the key to improving the police was thought to lie in the testing and development of improved operational programs for dealing with particular problems. As a result, important innovations were associated with the experimental testing of existing and proposed operational programs and methods such as random patrol, directed patrol, criminal investigation, the aggressive use of street stops, or robbery stake out squads.[12]

More recently, important ideas about how to improve policing have focused on changing the basic philosophy or strategy of policing -- including a re-definition of its important goals and purposes, the principal means it relies on, and the key working relationships that must be established outside and within the departments. In effect, then, the principal kinds of innovation correspond to different eras of thought about police reform and improvment.[13]

Given this history, it is not surprising, that at this particular moment, we would find advocates of all these positions, and that the kinds of innovation they thought were important would reflect their individual experience.

11 President's Crime Commission report on the police
12 Police reform through research and experimentation
13 Goldstein, Problem Oriented Policing

Indeed, as we listened to the experts and reviewed their responses, we had the distinct impression that we were learning at least as much about the experts as the innovations. Indeed, it seemed that their rankings of innovations could be more accurately predicted from their formative experiences and how they had positioned themselves in the broader field of policing than from any intrinsic features of the innovations themselves.

Reflection suggests that might be true of us as well, and that the hopes for any objective assessment of important innovations (through this method, at least) was limited. One might expect this same general pattern in other fields when one consulted a panel of experts on what were important innovations, but it would necessarily be true that history would have made the same crucial distinctions in those fields that it has made in policing.

2.5. Substantive Findings: Evaluative Criteria

One of the real strengths of the expert panel lay in the discussion of the criteria to be used in assessing the importance of a particular innovation. Recall that we asked this question unprompted as the second question in the interview, and then again as we considered examples of the particular kinds of innovations (e.g. technological, operational, administrative, and strategic). Respondents

gave us answers which were accumulated as criteria to be used "in general"; but it also became clear that different kinds of innovations were evaluated somewhat differently.

Output and Outcome Oriented Criteria

The most consistent response we received to this question was that the innovation should have "accomplished what it was intended to do." Obviously, this is a very general statement, but does reveal that, in the minds of our respondents, an innovation could not be important if it did not produce some valuable, concrete result. In this respect, our respondents reflected the views of those who judge innovations by their immediate operational utility.

Respondents felt the need to give substantive content to this rather general statement, and therefore introduced criteria that reflected their views about what the important objectives of policing were. Many indicated that the innovation should have "reduced crime", or "reduced fears", or "increased public satisfaction". The traditionalists tended to emphasize the objective of "reducing crime" -- even to establish it as the exclusive criterion for judging the value of an innovation. Those who were more interested in the newer strategies of policing were more inclined to suggest both "fear reduction" and "increased public satisfaction" as important effects that police innovations could have.

The concept of "increased public satisfaction" is somewhat ambiguous. Ideally, increased public satisfaction would be derived from the police concretely improving their performance in dealing with issues that concern the community. In some respondents' views, those concerns are most importantly crime and criminal victimization. Therefore the only proper way for the police to "earn" increased public satisfaction is to reduce crime.

Other respondents seemed to think that a different way the police could perform to increase citizen satisfaction is by making themselves more responsive to problems that citizens nominate as important problems. They did not assume that crime is the most important or only problem that citizens have to which the police may make a useful contribution. Instead, they imagined that there may be a wide variety of problems where the concrete performance of the police could change and produce improvements.

Still others seemed to think that the police can increase citizen satisfaction not by actually producing results such as reduced crime, or making progress on other problems that might be distressing the citizenry such as unruly conduct, or disorderly conditions, but instead simply by working on citizens' perceptions. This, too, could be produced concretely by making the police more prompt, more

courteous, more helpful and so on in responding to calls for service, or more accessible to citizens on the street and less confrontational and defensive in neighborhood meetings. It is these notions that are picked up by such criteria as "improved service quality" or "increased police responsiveness". And these criteria were sometimes advanced by our respondents.

The difficulty with these criteria for some of our respondents, however, was that they smacked of public relations gimmicks, devoid of substantive content. They worried that the police might cheat, and produce increased public satisfaction simply by putting on a good face to the public. That would be particularly objectionable if the good face were not earned day to day in specific, concrete encounters with the police, but instead on a wholesale basis through a good public relations campaign that papered over the real character of a police department's performance.

Thus, our respondents were divided on the question of whether "increased public satisfaction" was a proper criterion. Nearly everyone seemed to feel that this was important, but many were also concerned that the effect could be produced dishonestly as well as honestly, and they wanted to give credit only to the honest ways. And there was disagreement about whether honest ways included changing the focus of police efforts to problems that concerned citizens, and improving service quality as well as reducing crime.

Cost-Effectiveness, Efficiency and Productivity

In addition to producing some valuable result, many of our respondents thought that the impact of the innovation should be favorably related to its cost. This was explicitly stated as a criterion by some who nominated "cost-effectiveness" as an important criterion for evaluating particular innovations. In addition, however, other respondents used words like "increased efficiency" or "enhanced productivity" as criteria to be used in weighing the significance of particular innovations.

Interestingly, there seemed to be an important difference in the way that the respondents used these words. "Cost effectiveness" was a criterion that seemed appropriate in judging both particular operational programs, and those innovations that were supposed to improve the overall functioning of police departments; or more particularly, its ability to perform its general functions such as patrol and investigation. "Increased efficiency" and "enhanced productivity" on the other hand seem to be used most when one was discussing the administrative or technological innovations that were thought to support the overall performance of the organization. It is as though "efficiency" and "productivity" depend on there being a stable, general police objective against which performance

can be judged. The concept of "cost effectiveness", on the other hand, allows there to be an evaluation of individual projects that may be within or outside the traditional boundaries of the department's mission.

Implementation Issues

The expert panel also identified several criteria that focused on questions of implementation and operational feasibility. By far the most commonly nominated was simply "impact on officer morale and satisfaction." For many respondents, this was important to consider in evaluating an innovation because it could be expected to have an impact on the ease of implementation. For others, this criterion had the same status as an outcome measure; for them, the impact of the innovation on their officers morale was as important a result as the impact on objective social conditions or the perceptions of citizens. For still others, this criterion was important because it affected the general climate within the organization; it helped to "commit the officers" to the enterprise; or readied the organization to develop and respond to other new ideas.

The second most commonly identified implementation criterion focused on the "survivability" or "institutionalization" of the innovation. The notion was simply that an innovation could not be important if it did not survive for some period of time within the organization.

Thus, in general, the panel seemed to think that, all other things being equal, an innovation that had a favorable impact on officer morale, fitted comfortably within the existing culture of the police, and survived, was to be preferred over one that would face resistance and opposition.

But there was a contrary theme in the panel's responses that is worth underlining: the notion that the important innovations were ones that were risky and stretched an organization's conception of what was possible or appropriate. These respondents saw any particular innovation as less important in itself than as something that would have wider implications. If it could influence the organization and the field at large by "teaching it to ask better questions", or by broadening discussions and leading to productive ferment, that would be as valuable as an innovation that fitted comfortably in the old groove.

In this view, even innovations that failed could be important, and those innovations that stretched the thinking of the field and succeeded would be the most important of all. Indeed, these observations help make sense of some other responses that the panelist offered in which they evaluated innovations not as particular ideas in themselves, but instead as ideas that were seen in the broader context

of the development of the field's knowledge as a whole, or of the impact of any particular innovation on the trajectory of the organization in which it was introduced. These were what one respondent called "the second and third round implications of an innovation".

Value in the Broader Field of Policing

Many of our respondents saw and evaluated innovations in terms of their impact on the broad field of policing. Thus, they focused attention on such issues as the "diffusion" of the innovation, its "widespread adoption", or its "diffuseability", "replicability" and "adapatability". The intuitive notion here is that the more widely used an innovation becomes, and the more properties an innovation has that makes it likely to become widely used, the better the innovation is.

Others saw innovations as experiments designed to expand the boundaries of knowledge about policing and what works. From this perspective, innovations were evaluated in terms of the contribution to the goal of "systematizing police knowledge"; or "using research to modify operational procedures"; or "filling gaps" in the array of police techniques; or "adding to police knowledge"; or both "exploiting and fitting within the cumulative development of knowledge within the field". Thus, each innovation becomes a

piece of new technical knowledge that is, in principle at least, broadly available to the field, and adds to the total stock of knowledge about how best to use police resources to accomplish particular objectives. Innovations must be evaluated as "research and development projects", and those that are successful in important areas are more important that those that succeed in unimportant areas, or that fail in interesting and instructive ways to deal with a major challenge facing policing.

Here, too, there was a contrary theme, however: one that valued risk, ambition and failure as well as replicable successes. Many respondents, for example, stressed that "novelty" was an important characteristic: if a program wasn't new in some important sense, it should not be called an innovation, and could not be valued as an innovation. Even more boldly, some argued that the value of an innovation was related to the extent to which it challenged common assumptions and beliefs. In this view, upsetting and correcting a widely endorsed conventional wisdom is more important than exploring new areas where no one thinks they know much, and so any approach seems reasonable.

Philosophical and Strategic Implications

A majority of our respondents evaluated innovations not simply in terms of their effectiveness and feasibility,

and not only in terms of their contributions to knowledge in the field, but also in terms of how the innovations affected the future development of the organizations in which they were introduced, and shaped the overall conceptions of the field about the proper ends and means of policing. In describing the potential importance of innovations, these respondents used phrases such as "change the mindset of the police"; or "alters the paradigm of policing"; or "changes definition of policing"; or produces a "big effect on what police do"; or "shifts policing towards becoming a serious, human service enterprise".

Moreover, these respondents had specific ideas of how innovations could produce such effects. One thing they watched for was the effect that one innovation had on the likelihood of additional innovations in the department. They wanted to see how an innovation "helped ask better questions"; or "stimulated a climate of innovativeness"; or "encouraged continuous improvement"; or "stretched thinking within the department".

A second thing they considered was the extent to which the innovation, or the process by which the innovation was initiated and implemented, shifted the location of decision-making and initiative downward in the organization, and diffused the responsibility and authority for undertaking innovations more broadly through the department.

A third thing they considered important was the extent to which an innovation involved citizens, either by constituting a response to a problem that the citizens brought to the fore, or by engaging citizens in the operational solution of the problem. Thus, some talked about the value of innovations that "tapped into public concerns"; or that "opened doors to the outside"; or that "mobilized others to deal with crime"; or that "got citizens involved and distributed the responsibility for preventing and solving crimes to other agencies, and to the citizens themselves".

These, of course, are characteristics of police organizations that are trying to make the transition to " "community oriented" or "problem oriented" policing.[14] Thus, many of our respondents evaluated particular innovations in terms of their impact on any particular organization's transition to this strategy of policing, or the movement of the field as a whole in this direction. Others saw in innovations only the potential for improvement within the existing frame of policing.

2.6. Substantive Findings: The Important Innovations

14 Discussions of community policing and problem oriented policing as new strategies of policing

Ultimately, the purpose of the interviews was to learn what the respondents thought were the most important innovations in policing. Table 1 presents the votes given for particular innovations by the expert panel. The "philosophical" or "strategic" innovations -- Problem Oriented Policing and Community Policing -- were rated the most significant by our group of respondents, along with the increased operational capabilities associated with having computers in patrol cars which linked the officers to national and city-wide data bases, and gave them the potential for improving both report writing and crime analysis.

Also near the top were the analytical developments in analyzing calls for service and doing various forms of crime analysis. They also rated highly the deployment of automated fingerprint systems which aid in the solution of crimes, and the accurate identification of arrested offenders.

The two most important administrative innovations had to do with improving the education and training of officers, and the changes in organizational structure designed to capitalize on that improved education and training by estabilishing geographically decentralized units in police departments that could facilitate police/community interaction, and allow for the decentralized initiation of

innovative programs. (Decentralization of responsibility and participatory management were ranked just below geographic decentralization as important innovations).

The most important operational programs identified by the respondents represent an interesting triad. The most important was the increased focus on arresting and building strong cases against repeat, active offenders in both the adult and juvenile population. The next most important were innovations that focused on fear and the conditions that generated fear (including minor instances of disorder), and the development of programs to deal with special populations (such as battered spouses, rape victims, the mentally ill, and the homeless). This triad is interesting because it indicates that our respondents are (collectively) recognizing the broad front on which the police must engage the problems of a community (from serious crime committed by dangerous offenders to disorderly conditions that stimulate fears); and the broad heterogeneity of the populations they must find ways to serve and control (victims as well as offenders; minor offenders as well as serious offenders; people involved in social emergencies as well as crimes).

Very few innovations are nominated by more than half our respondents. This might be expected given the wide variety of criteria used by our respondents in evaluating the innovations.

2.7 Conclusions

This method turned out to be most helpful in testing the utility and value of our classification of innovations in terms of technological, operational, administrative, and strategic. It was also extremely useful in broadening and differentiating the criteria that could be used to evaluate particular innovations. It was much less helpful in identifying particular innovations as more or less important.

This result was probably due as much to the interview format as to the fact that this was an expert panel. What turned out to be interesting to talk about was the general idea of how one should evaluate innovations, and what the significance of innovations are for the field of policing. It was much harder to get people to make disciplined comparisons of particular innovations. If we wanted the expert panel to do the latter, it could probably be best accomplished by sending the panel the survey form and asking them to fill it out.

3.0 The Survey

The second method of identifying the most important innovations was an opinion poll of police chiefs and county

sheriffs serving metropolitan areas. They were asked for their observations and opinions in three areas: 1) the ten innovations in policing they considered to be the most important in the past decade; 2) how these innovations ranked against specific evaluative criteria (e.g., importance of the problem addressed); and 3) whether and how their own organizations had implemented specific innovations.

3.1. Hypothesized Strengths and Weaknesses

If the key strengths of an expert panel interviewed personally are expertise and depth, the principal strengths of a mail survey of a sample of the field are breadth and objectivity. It is only slightly more difficult to survey 400 police managers through the mail than it would have been to survey twenty. Moreover, because more people are included, and those who are included are more typical of the field as a whole, a survey provides a better indication of what the field is actually thinking and doing than either the expert panel or the content analysis.

A mail survey of a sample of the field also avoids the potential biases associated with the expert panel or the content analysis of journals. Our expert panelists all knew one another, and many had met on many occasions to talk about police innovation issues. We suspect that writers of

articles in professional journals are also more likely to be tied in to informal communication networks. Consequently, their judgments will not necessarily be independent of one another's. In contrast, although the police profession as a whole gets together occasionally through conferences and reading professional publications, one would expect the survey respondents to have had fewer opportunities to discuss their views about important innovations with one another. That may make them less expert, but also means that their responses will be more independent of one another, and therefore less vulnerable to any kind of "group think".

Finally, because all respondents answer exactly the same questions, their responses are directly comparable. The discipline of the survey form eases the task of aggregating responses. More complex statistical procedures become possible.

All this suggests that the mail survey may be a better way of identifying the current state of the field, and (perhaps) a more efficient way of determining where the field has been. Some comparisons are less favorable, however.

As noted above, the respondents may not have spent much time thinking about the most important innovations in policing, and may, therefore, be in a poor position to

respond to our questions. Further, interviewees can talk back to their interviewers, and ask questions when they do not understand what the interviewer wants, thereby increasing the accuracy and consistency of their responses.

3.2. The Method: Choosing the Sample

To learn what the field as a whole thought were the important innovations in policing, we conducted a mail survey of 202 police chiefs. The sample was randomly drawn from a list of 401 police departments and sheriff's offices serving populations of 50,000 or more published in the Directory of Law Enforcement Agencies--1986. Because the vast majority of these agencies are very small and serve very small service areas, to get an accurate view of what the field as a whole was doing, it was important to prevent the small agencies from overwhelming the sample. Consequently, the probability of sampling was set proportionate to the population served. This produced a stratified sample that oversamples large departments and excludes rural departments entirely.

3.3. The Method: The Survey Instrument

All respondents were mailed an eight-page survey. (A copy of the questionnaire is attached as Appendix A.) Section 1 of the survey asked the respondents simply to list

the ten most important innovations in policing in the past decade. This request was completely open-ended. No programs were nominated for their consideration.

In Section 2 of the survey, we provided a list of thirty specific innovations, and asked the respondents to rate each innovation on five criteria:

1) overall importance of the innovation;

2) the importance of the problem addressed by the innovation;

3) the effectiveness of the innovation at solving this problem;

4) the costs and difficulty of implementation; and

5) the extent to which the innovation would improve external support for the department and the department's future operations.

Explanations of each criterion were included.

Section 2 also explored the responding agency's operational experience with the particular innovations. Respondents were asked to check all of the following statements that applied to them:

1) We have considered this innovation for adoption.

2) We have implemented a pilot program.

3) We have decided to adopt this innovation on a full-scale basis.

4) We have completed full-scale implementation.

In addition, respondents were asked whether their agency had cut back, discontinued, or decided against the innovation, and whether they had evaluated it. If the respondent's agency had decided to implement the innovation on a full-scale basis, they were asked to indicate in what year this decision was made.

In evaluating the responses to Section 1 of the survey it is worth noting that all but one of the innovations nominated in this section were included on the list of 30 innovations we presented in section 2. It seems clear that at least a few respondents read the second section of the survey before filling out the first section, and it seems reasonable to suppose that this influenced their responses.

3.4. The Method: Accuracy in the Responses

A major threat to the accuracy of the mail survey is the possibility that those who respondend to the survey were simply not in a position to know how to answer the questions. To deal with this problem, we requested that police chiefs and sheriffs answer the survey themselves, rather than delegating it to staff, trusting their judgment more than their staffs. We know that some chiefs and sheriffs completed the surveys themselves--they signed them. In other cases, staff indicated that they had completed the survey. In 80 percent of cases, however, the specific respondent within the department remained unknown.

Eventually, 202 completed responses were received out of four hundred mailed. Six of the sampled agencies turned out not to be county sheriffs offices which were not the primary providers of police services to their jurisdictions. Thus, the final response rate was 202/394 -- about 51 percent, a moderately good response rate for a mail survey of this size. Preliminary analysis showed that there were no significant differences in the responses provided by early and late respondents. This suggests that response bias is minimal (Babbie, 1991).

3.5 Substantive Results: The Important Innovations

The survey as designed and administered permitted not only an analysis of what innovations were considered important and what made them important, but also some preliminary analysis of the diffusion of innovations across the field of policing. The analysis of the diffusion of innovations is presented elsewhere in a separate paper. Here we focus on what were the important innovations and what made them important.

Survey respondents were asked to rate the importance of police innovations in two ways. First, we asked them to list the ten innovations that had had the greatest impact on police work in the last decade. Some 16.4 percent of respondents did not fill out this top ten list, and some provided somewhat more or fewer than ten innovations. Only the first twelve innovations mentioned were coded. The average respondent who answered these questions provided 9.3 innovations.

Second, a list of thirty innovations was provided, and respondents were asked to rate the importance of each on a three-point scale. Although three points is usually too few to obtain consistent results on a Likert scale, the pretest showed that use of a six-point scale would dramatically increase the time required to complete the survey form, probably reducing the response rate. The scale chosen was asymmetric (two "important" options and only one

"unimportant" option were available), but given the method by which candidate innovations were developed, this seemed appropriate.

By combining results of these two methods, we can define the "most important" innovations in:

Top ten status, those innovations that were written in most frequently on the "top ten" list;

"Very important" ratings, those innovations of the thirty candidates provided that received a "very important" rating most often; and

"Important" ratings, those innovations of the thirty candidates that received a rating of "important" or "very important" most often.

Although one would expect the results of these methods to be positively correlated, they measure complementary rather than identical concepts. The first two methods measure the enthusiasm produced by an innovation, and perhaps the size of the impact it has had on the field. The third is simply the degree of consensus as to whether the innovation provides more benefits than costs to adopting agencies. Thus it is conceivable that everyone might agree a mundane but useful innovation is "important," but no one

would believe it to be "very important" or put it on a "top ten" list.

Table 2 shows the "top ten" and "very important" ratings for the thirty candidate innovations. The (Spearman's rank) correlation among the two scales is .90, confirming that these are two means of obtaining essentially the same results. Normalizing the percentages and combining the scales provides the following "top ten" list:

1. Community policing
2. Drug abuse resistance education (DARE)
3. Asset forfeiture
4. Automated fingerprint ID systems
5. Computer-aided dispatch
6. DNA typing
7. Neighborhood watch
8. Problem-oriented policing
9. Patrol car computers
10. Accreditation

Results of the third method of measuring importance are shown in Table 3. Most of the respondents believed that most of the innovations on this list were good ideas, but some innovations (accreditation and master patrol officers) were viewed positively by many fewer respondents than the tightly clustered groups of top rated innovations. As expected, the "important" scale was positively correlated with the "very important" and "top ten" scales ($r = .69$ and .66, respectively). Although moderately large and statistically significant, these are much lower than the correlation between the "top ten" and "very important" scales, strengthening the argument that "importance" is a

related but separate dimension.

To get a better handle on the differences among these scales, we can look at the same data in a somewhat different way. For the average innovation, results on the three-point scale are almost exactly symmetric: 18 percent of respondents believe the innovation is very important; 65 percent believe it is important (but not very important); and 17 percent believe the innovation is not important. As I, the percentage of people agreeing that an innovation is important increases, so will VI, the percentage agreeing that it is very important. The relationship between the two is given by:

$$VI = -47.33 + 0.789\ I + e,$$

where e is an error term.

If e is much greater than zero for some innovation, this suggests that the innovation produces more than usual support among its followers. If an innovation is not well known or well understood by many police managers, this residual may even be a better indication of the perceived importance of the innovation than the total percentage of "very important" scores. If, on the other hand, the error is much less than zero, this suggests that support is broad but shallow, and even those who consider the innovation important do not believe it has changed police work by much.

Four innovations had particularly high residual scores:

Community policing	+18.5%
Accreditation	+12.1
Problem-oriented policing	+10.6
DARE	+ 8.8

Community policing, accreditation, and problem-oriented policing are probably the three most complicated innovations among the thirty studied; none have been adopted by more than 25 percent of the responding departments, but the number of adopting agencies has grown dramatically in the last few years. Thus it is reasonable to presume that, for at least a few of these innovations, more respondents would have agreed that the innovations were important if they had known more about them.

Incidentally, three innovations had residual scores substantially less than zero:

Repeat offender programs	- 10.7%
Directed patrol	- 8.8
Hiring women	- 8.5

Although each of these innovations could be used strategically, none are inconsistent with traditional police work. And none of them are new--the average adopting agency has maintained the average innovation on this list for over nine years. It is not surprising that familiar and rather traditional changes in policies and procedures generate little current enthusiasm.

3.6 Substantive Results: Criteria of Importance

To help us understand what makes these innovations important, we asked our respondents to rate each innovation on a variety of criteria. An initial list of twelve criteria was reduced to five, which we explained to respondents as follows:

> Innovation addresses an important problem. That is, the problem is serious, extensive, or both.
>
> Innovation is effective. It solves or ameliorates the problem, and doesn't make things worse.
>
> Innovation is cheap and easy to implement.
>
> Innovation improves external support for the department. It improves community relations or political popularity, or it helps the department adhere to professional standards.
>
> Innovation improves future operating capacity of the department. For example, it may increase your ability to adopt future innovations, or neutralize dissension among the ranks that helps you undertake new initiatives.

Although not exhaustive, these criteria cover a wide range of reasons to adopt (or reject) innovations.

Again, respondents rated each of the thirty candidate innovations along each of these dimensions according to a three-point Likert scale (disagree, agree, strongly agree). Although asymmetrical, the nature of the questions and the roughly symmetrical distribution of the responses suggests that this was the best, short-cut scale available. More complete scales would have increased respondent preparation time and reduced response rates. Mean ratings on each criterion for each innovation are shown in Table 4.

Because we have data on both the overall ranking of the particular innovations, and on the rankings of the innovations on each particular dimension importance, it is possible to determine which particular characteristics of innovations turned out, on average, to be important in shaping judgements about overall effectiveness. The method is simply to regress the overall assessments of importance on the more particular judgments about how important each innovation was on the particular criteria that together defined overall importance.

Since our aim here is to compare among the innovations available, the proper unit of analysis is the innovation itself. Thus, each combination of respondent and

innovation was considered a separate case. Theoretically, the file would consist of 202 respondents times 30 innovations = 6,060 observations. Because many respondents did not answer all the questions, however, the sample available for this regression was considerably smaller (3,604). Because the importance scores for most innovations were slightly positively correlated, the standard errors of the regression coefficients are somewhat too small. The coefficients themselves are unbiased, however.

Results are shown in Table 5. The table shows standardized betas, standard errors, and probability values obtained by regressing the mean importance rating on the independent variables available, plus dummy variables representing each of the eight individual innovations that were significantly different from the average.

The most important predictors of the importance of these 30 innovations appear to be the importance of the issue the innovation addresses and the effectiveness of the innovation. Apparently, the field as a whole judges innovations primarily in terms of their operational utility. The ability of the innovation to improve the future capacity of the department--the internal strategic value of the innovation--and the ability of the innovation to improve external support--the innovation's political palatability--are less significant. Cost matters little.

Although the effectiveness of the innovation proved to be an important predictor, it was not of overwhelming importance compared to the others. This suggests that a spectacular failure might still be an important innovation if it is directed at an important issue, especially if it helps the police manager improve external support and internal operating capacity. Change agents rarely emphasize these ancillary objectives in their diffusion efforts, usually focusing entirely on effectiveness. This analysis suggests that they would do well to recognize and make use of the strategic behavior of police managers.

3.7 Summary: Strengths and Weaknesses

This analysis does not exhaust the information available in this survey, and certainly it does not exhaust the possibilities of the method. Still, in addition to producing substantively useful results, it does show some of the strengths and weaknesses of innovation surveys.

The survey proved most helpful at answering straightforward questions: Which innovations were most important? What made them important? Which were most widely adopted? For these conceptually simple questions of fact and evaluation, large sample size and comparability among respondents make the survey the best means of getting useful answers.

Given that the survey was most useful at answering straightforward questions, it pays to ask whether a better survey would have obtained better answers. Certainly the survey need not be so long. The high correlation between the free-answer and closed-answer formats suggests that the free-answer form was enough. Respondents could produce the list within a few minutes. If no cues had been provided as to which innovations might be important, the responses may have been more diffuse than those produced here. On the other hand, there was tremendous consensus as to the top ten innovations. If this is true for fields outside police work, the basic list could be obtained by distributing a very simple survey to a much-smaller sample of chief executives.

A shorter, simpler survey would also have helped to solve two other problems common to mail surveys: not all those surveyed respond, and it was not clear that the most knowledgeable person responded. Given the length of the survey instrument, we think we were lucky to get a 50% response rate, and to have few indications of a response bias. Nonetheless, the response would almost certainly have been strengthened by a shorter form. Some respondents reported that the survey took them several hours to complete--much longer than we had in mind, and a nasty imposition on a busy manager. A more comprehensive pretest would probably have identified this problem, especially if

the pretest had continued through several drafts of the survey until all the problems had been worked out.

Similarly, although we asked the chief of police to complete the questionnaire, we know that at least a few (about 12 percent) delegated it to others in the organization. The true number of delegated questionnaires may have been several times this figure. A short survey is more likely to be filled out by the chief executive, producing data of greater reliability and validity.

Still, if it is important to get an objective estimate of the field's view of what important innovations have been, a mail survey is a good way to go -- particularly if one keeps the questionnaire short and simple.

4.0 Content Analysis of Meetings and Journals

The third method we tested relied on the idea that the most important innovations in policing could be discovered by observing how much discussion they received in the on-going dialogue within the profession. By assumption, that dialogue occurred in two different fora: national meetings on policing ("talk"), or in widely read professional journals ("ink"). To determine what innovations the field thought was important, then, all one had to do was to look at the amount of "talk" or "ink" that was devoted to them.

4.1. Hypothesized Strengths and Weaknesses

The great virtue of relying on reviews of meetings and publications of the profession in deciding which innovations are important is that it is an indirect method of finding out what is on the mind of the field. It doesn't depend on respondents having thought about the subject of innovation in the field, and doesn't risk being contaminated by the experimenter's introduction of a new and unfamiliar subject. All the researcher has to do is simply observe what the field has talked about or written about. He or she can apply their own criteria of innovation in interpreting that experience, and in doing so, know exactly what definition is being used.

This method has the additional virtue of exposing the researcher to a large number of specific activities that can be considered candidate innovations. This is very important if one is trying to develop either categories of innovation to present to the field, or a list of specific candidate innovations to be evaluated. Without knowing what is being talked about in the field, one would not know how to begin constructing such aids.

But there are liabilities as well. For one thing, it is hard to develop quantitative measures of importance. One

can observe that certain programs and activities are discussed or not, but one has no idea whether anyone other than the conference organizers or the editorial board of journals thinks the programs are important. And they may be driven as much by the need to fill out an agenda or a set of blank pages than to put important innovations before the field! Also, although the researcher can be free to develop and apply his own definition of innovation and therefore exercise some control over how the concept is used, there is no way to check the validity of the experimenter's construct. Thus, there are real limitations to the validity of the method.

4.3. The Method: Choosing the Meetings and Journals

Initially, we planned to look for both "talk" and "ink". We thought we could learn about the "talk" by obtaining the historical record of what had been discussed at national meetings in the field -- for example, the annual meetings of the International Association of Chiefs of Police, or the "State of the Art of Policing Conferences" hosted by the National Institute of Justice. We thought we could learn about the "ink" by reviewing several widely read journals in the field.

Ultimately, limits on our resources caused us to scale back our efforts. It proved difficult to decide which

were the "important" national meetings on policing, and to gather detailed historical materials on their agenda. This can be done, but not without spending a great deal of time.

That left the analysis of "ink." Here, some experimental efforts revealed that this, too, would be very time consuming. Particularly so since efforts to do computer aided searches keyed to words like "new", "innovative", "pathbreaking", "revolutionary" and so on produced very different selections of articles to be described than actually reading through the journals. As a result, we finally limited our work to the analysis of a decade of one journal important to the field.

The question then became: which journal? Our aim was to find the journal that could provide us with the best historical record of important innovations in the field of policing. We began with a list of 30 journals on policing. These were evaluated on the following criteria:

1) Focus on policing
2) Circulation
3) Longevity
4) Accessibility (to us)
5) Computerized Indexing (later abandoned when we learned that the indexing could not help us)

These criteria indicated that the best journal to use for our purpose was The Police Chief. We reviewed all articles in this journal from 1980-1989.

4.4 The Method: Defining and Recognizing Innovations

The review of this journal was designed to identify particular innovations being introduced to the field. We decided we would be broadly inclusive in our conception of what constituted an "innovation" judging that it would be easier to weed out things that could not reasonably be considered innovations at the later stages of the product once we had produced a record of each innovation we found in the journal.

We also decided that we would record each mention of a particular innovation in the journal -- not just the first time it occurred. The reason for this was that we thought repeat mentions would indicate additional adoptions and adaptations of the same basic idea, and would give evidence of the signficance of the idea.

Thus, the data elements for this content analysis consisted of a record of an innovation mentioned as such in The Police Chief magazine from 1980-1989. For each innovation we recorded the following information:

1) The name given to the innovation

2) A brief description of the innovation

3) Related innovations

4) The date of the published article on the innovation (not the date of the innovation itself since that was not always given)

5) The kind of innovation it was (more on this later)

6) The claims made for the value of the innovation

7) The cost or scale of the innovation

8) The extent to which the innovation had actually been adopted

Ideally, this would permit an analysis of when particular kinds of innovations appeared in the field, and what kinds of innovations the field as a whole tended to concentrate on. The distribution of innovations, in turn, would give us a sense of what the field thought was important. Repeat innovations would be considered particularly important. Clusters of innovations around particular areas would show the importance of that area.

4.5. The Method: Practical Problems

In practice, the method proved much more unwieldy and less precise than we had initially hoped. To complete the analysis, several research assistants had to be employed

to read through the journals. Although they were trained to look for things that could properly be counted as innovations, comparisons of their respective analyses of the same material indicated less than perfect "inter-rater validity:" one research assistant consistently recorded more "innovations" than the other. Without clear indications in the text of what was an innovation, they were left with many discretionary judgments, and they made them differently.

These decisions may also have been influenced by the sheer volume of the work. Deciding that an article described an innovation required the researcher to fill out lengthy card. Under pressure to complete the analysis, the criteria for including things as innovations may have unconsciously tightened up.

They may also have been somewhat biased in their reviews. It is always easier to identify technologies as important innovations than new programs or new administrative arrangements. Consequently, they may have responded more reliably to technological innovations than to the other sorts of innovations. In addition, both had worked with us on previous research projects, and knew about our interest in problem-solving and community policing. As a result, they may also have responded more often to innovations that seemed to be consistent with these emerging new styles of policing than to important changes in the methods of more traditional styles of policing.

It also became clear that, at least for this particular journal, the "article" that describes a very particular "innovation" might be the wrong unit of analysis. The Police Chief often had "thematic" issues that focused on broad issues facing the field, and had a variety of articles written on that subject -- some of them offering theoretical possibilities which nowhere existed, others describing several different innovations that had been tried in different departments.

Finally, and most importantly, the articles simply did not have enough information in them to record the data our protocol called for. There was no serious review of the literature to help us make the judgment of whether a particular program was globally new, or an adaptation of something that had been tried previously, or some well known program that was being given a new label. Nor did the articles describe the activities of police departments concretely and specifically enough to tell whether they were innovations or not.

It was also unclear that using the date of publication was the right date to use in describing when the innovation occurred. Often, the innovations that were being described had been initiated several years ago. Others were still on the drawing board, or barely into the first stages

of implementation. Yet, the journal did not reliably include this information either.

And there was little information in the articles about the cost or consequences of the particular innovations. In short, the journal fell way below the standards of the New England Journal of Medicine in being able to locate a particular new treatment in the context of all that had gone before, and in describing what was done and what the effects were.

Thus, this method proved problematic even for identifying the sequence with which particular innovations were introduced into the field, let alone identifying particular innovations that the field as a whole thought were important. There may still be some way to do this right from the existing stock of journals, but we did not find it.

4.6 The Method: Strengths of the Method

Despite these problems, this method did turn out to be helpful for a variety of less particular purposes. First, the long list of particular innovations dredged up by the content analysis (ranging from new fitness programs to officers, to the development of an airplane and radio equipped multi-agency task force to spot speeding in rural areas) forced us to refine and understand the categories

were we using to describe different kinds of innovations better than we could when we were thinking about the problem in the abstract. As is usually the case, our neat categories suffered a great deal of shock when brought into contact with empirical reality. The list of innovations from the journals also helped to develop a long list of particular innovations that could be used in the structured part of the survey.

Second, the content review proved to be valuable in giving us clues about what issues were on the field's mind. Both the themes that were used to organize particular issues of Police Chief, and the analysis of the distribution of types of innovations that were mentioned (and the time at which these innovations were discussed) helps to provide a gross picture of what the field thinks about, and the particular areas in which innovations would be valuable and important if they occurred -- at least in the mind of the field. Based on these strengths, it is possible to report some interesting findings from the content analysis of the Police Chief.

4.7 Substantive Results: Kinds of Innovations

One of the most important results of the content analysis was simply the encounter with the variety of concrete activities that were represented as innovations.

These included such activities as the creation of a special kit to be used in collecting evidence in rape cases, training programs to reduce fuel consumption in police driving, new ways of reporting crime statistics, a shift in emphasis from random to directed patrol, and the establishment of a system of rewards for information leading to arrests of suspects. Obviously, we needed some intermediate categories to help in analyzing the bewildering variety of innovations.

As noted above, at the outset, we had divided the kinds of innovations we expected to encounter into four different types:

> Technological Innovations included all those innovations that were crucially dependent on some new piece of capital equipment. Some of these would involve equipment changes such as the development of body armor, non-lethal weapons, and improved radio communications. Others would be technical inventions that helped to solve crimes such as the development of new methods of identification that depended on matching DNA types, or the improved, automated identification of fingerprints. Still others involved the application of computer technology to a wide range of police functions ranging from report writing to reliable secure communications.

Programmatic Innovations included new ways of using the resources of the organization to accomplish particular operational purposes. Examples of programmatic innovations would include the following: reliance on stake-out units to apprehend robbers and deter robberies; targeting fences as a way of discouraging burglaries; using police officers to provide drug education in schools; or providing victim resistance training to women.

Administrative Innovations were those that represented changes in the ways that organizations prepared themselves for operations, or accounted for their accomplishments. Thus, for example, many innovations in the personnel area including new recruitment methods, new training approaches, and new supervisory relationships within the department were considered administrative innovations. So were those innovations that involved new ways of measuring the individual performance of officers, or the aggregate performance of the department. The development of the accreditation process, for example, was recorded as and administrative rather than programmatic innovation.

Strategic Innovations were changes that seemed to reflect, or foreshadow, or in some important sense lead to a fundamental change in the position and orientation of police departments. This could involve the re-definition of the proper purposes and goals of policing; or the development of important new means for accomplishing the broad goals of policing; or significant changes in the way that the police financed themselves; or important changes in the external and internal working relationships of a department.

Obviously, these categories do not have clearly defined boundaries, and many classifications are judgment calls with potentially low inter-rater reliability. Nonetheless, we thought these distinctions were important. Moreover, we were emboldened in thinking the distinctions were important as a result of our interviews with the expert panel, many of whom would also cut up the world on one or more of these dimensions, and all of could understand and work with our scheme once it was presented to them. Most important of all, however, was the fact that we learned a great deal more about the relationships among these different categories of innovation as they were brought into contact with the concrete activities described in the journals.

More specifically, we learned that it was both possible and valuable to look at programmatic innovations in terms of three sub-categories:

1) the particular problem to which the police were responding (e.g. crime in general; specific crimes such as robbery burglary, rape; youth crime; fear; traffic; community relations; etc.);

2) the particular method the police were using to deal with the problem (e.g. traditional methods such as arrest, investigation, and directed patrol; or new methods such as mini-stations, referrals, education, or community mobilization); and

3) the particular groups that were being responded to or benefitted by the particular programmatic innovation (e.g. the general citizenry, particular communities within a city, women, youth, residents of housing projects, etc.)

The notion was that it might be able to see in the trends of programmatic innovations certain evolutions towards taking some new problems more seriously than others, or relying increasingly on new methods, or becoming more responsive to groups that had not previously been able to claim much police attention.

We also learned that every innovation classified as a technological innovation could also be characterized as either a programmatic, administrative or strategic innovation. The reason, of course, was that the category of technological innovation was orthogonal to the other categories that we were using.

The distinction between administrative and programmatic innovations has to do with the organizational purpose or function of the innovation. The defining characteristic of a technological innovation is not its purpose, but the material in which the innovation is embodied. It is embodied not in the way that people within the organization use their time and effort differently, but instead in a piece of capital equipment. That has important implications for how people in the organization use their time. But the key point is that it is embodied in capital equipment. That means that its purpose has not yet been characterized, and that every technological innovation can be further represented as a programmatic, administrative, or strategic innovation.

One of the most difficult kinds of innovations to categorize were often those involving new uses of computers in policing. In some instances, where they were used to support firearms training programs, or where they helped to

search for fingerprints, the classifications were pretty straightforward (they would be classified as administrative/firearms training; and programmatic/criminal investigation respectively). In many other cases involving lap top terminals, mobile digital terminals, or computer aided dispatch systems, the technological innovations were much harder to classify since the systems affected both operations, and administrative arrangements.

Sometimes it seemed that their potential or current effects were large enough to count as strategic changes, but it was unclear in what directions the change was carrying the field. For example, cellular telephones could be used as a way of establishing much closer contact between officers and individual citizens, since citizens would be able to call individual officers in their cars directly. On the other hand, mobile digital terminals seemed valuable principally because they increased the reliability and security of communications within the police department, and gave officers access to departmental data bases. It seemed, then, that cellular phones wired officers more closely to citizens, while mobile digital terminals wired them more closely to the organization.

By far the most difficult distinction to make was that between strategic innovations and all the others. The key idea behind a strategic innovation is that it is the

kind of innovation that has large implications for the overall position of the organization in the society. It threatens, or actually changes, the paradigm of policing. Instead of simply improving performance within an existing frame of existing goals and methods, it changes the frame by re-defining the purposes, or inventing new methods, or establishing new external or internal working relationships in the organization.

To a great degree we were aided in making this call by our knowledge of (and interest in) the important strategic innovations now occurring in policing. These include re-thinking the ends of policing to include crime prevention, fear reduction, and emergency services as important goals of policing that go beyond the goal of controlling crime or apprehending offenders after the fact. They also include re-thinking the means of policing to emphasize the community's own role in controlling crime and promoting security, and the wider use of analytic problem-solving methods to get at conditions that are producing repeat calls to particular locations and people. They also include a shift in external and internal working relationships, with an effort to increase the visiblity and transparency of police operations to ordinary citizens, and to decentralize initiative and flatten hierarchies in internal organization. Finally, they include developing new revenue sources for police including special taxes, the

creation of local foundations, and the acceptance of gifts of training, property, and so on from local donors.

To some degree, these changes all go together, and are packaged together in new ideas called "problem-solving" or "community" policing. When these were presented in the journals, they were recorded as strategic ideas. In addition, however, when new activities that moved in the direction of these new ideas of policing were mentioned, they, too, were recorded as strategic innovations (usually also with a reference to whether they were strategically significant in the programmatic, administrative, or technological realm).

The notion was that particular innovations that were not themselves strategic could nonetheless become strategically important because they pointed the way toward strategic innovations, or actually unleashed forces inside or outside the organization that would increase the likelihood of a strategic change taking place. For example, the increased use of surveys measuring levels of victimization, fear, self-defense measures, and the valuation of recent experiences with the police, as methods of evaluating police department performance could be taken as strategically important, not only because they reflect different ideas about what police departments should be accomplishing, but also because they will help to bring about the changes.

Thus, our analytic scheme for categorizing innovations was refined through the collision with the varied innovations we encountered in the journals. This was a valuable exercise even if the particular innovations were not an accurate census of the innovations in the field. As long as they had sufficient variety, our analytic scheme would be usefully tested. Fortunately, it held up well.

4.7. Substantive Results: Important Innovations

The individual innovations were classified by types and date in our analytic scheme. The coding was done by one of the principal investigators on the basis of cards prepared by research assistants that recorded the name of the innovation, offered a brief description of the activity, and also presented the claims made for it. Based on these cards and the coding, one can say something about the overall patterns of police innovation as revealed by the content analysis.

First, as Table 6 indicates, the types of innovations were not uniformly distributed across the types. Under a narrow definition of what constituted a "strategic innovation", about a third of the innovations were technological, about a third were programmatic, about a quarter were administrative, and about a tenth were

strategic. Under a broader definition of what constituted a strategic innovation, technological innovations remained at about a third of all innovations, programmatic dropped to about a fifth, administrative dropped to a fifth, and strategic rose to about a fifth.

Second, as Table 7 indicates, the general problems that the police were trying to solve through the innovations recorded in the journal were most importantly, the problems of crime, youth crime, and community relations. Among crimes, the most important general crime control, drugs, burglary and child abuse. Among the problems of youth crime, the police start off being concerned with general forms of delinquency, and end up being concerned about gangs. Fear makes an appearance as a problem to be handled, but seems to attract no more innovative effort than civil emergencies or terrorism.

Third, as Table 8 indicates, the methods on which the police relied were split about evenly between the "traditional" methods emphasizing arrests, investigation, patrol, and so on; and the "newer" methods involving closer contact with citizens (foot patrol, mini-stations, victim services); a sustained contact with social problems (the direct provision of social services or counselling, or more active referrals to other agencies); efforts to mobilize citizens for community self-defense (education, victim

resistance training, community mobilization, recruiting volunteers); and problem-solving and crime prevention. Among the traditional methods, the heaviest reliance was placed on investigation, directed patrol, multi-agency task forces, and liason with interested groups. Among the new methods, the heaviest reliance was placed on education, prevention, foot patrol, and victim resistance training.

Fourth, as Table 9 indicates, the police continued for the most part to be focused on protecting the broad population without reference to particular groups. To the extent that particular groups seemed to make claims on innovative efforts, schools and youth got the most special attention, with particular communities, women, and drivers not far behind. The elderly and residents of housing projects also emerged as groups of special interest and concern.

Fifth, as Table 10 indicates, the overwhelming majority of the administrative innovations were focused on human resource management. Among the human resource programs, a surprising amount of innovative energy went into the development of fitness programs for officers. Only moderate amounts of effort were expended on aggregate and individual performance measurement, or cost controls and efficiency gains.

In assessing the significance of these findings for the pace, focus, and character of police innovations, it is worth keeping in mind all the limitations on the data described above.

4.8. Summary: Strengths and Weaknesses

In sum, content analysis did not really help to identify particular innovations that were important to the field. One can see in the records the history of some important national innovations. For example, one can see the effects of a nationally sponsored effort to improve the measurement of police performance through the creation of new crime reporting systems. One can also see the influence of such programs as "Crime Stoppers" (a program offering cash rewards to citizens who contribute information that results in solving a crime); and Drug Abuse Resistance Education (a program that uses police officers to educate fourth and fifth grade students in the hazards of drug abuse). One can also see the emergence of fear reduction programs, and community policing, and problem solving and participatory management as new themes in policing. But there is no way to gauge the significance of these innovations quantitatively simply by recording their appearance in the field's journals. For that, one must rely on other methods.

What the content analysis was most useful for was: 1) testing and refining the categories we wanted to to use to describe and analyze types of innovations; 2) helping us develop a list of innovations that could be used in the structured part of a survey, or in interrogating the experet panel; and 3) giving a rough indication of what the field as a whole was thinking about (with more or less energy) over a particular period of time. Thus, it is often a useful place to start an analysis of innovation within a particular substantive field, but it will yield more suggestive ideas about the overall context than definitive conclusions about what are the most important innovations.

5.0 Conclusion

In our attempt to determine which innovations are most important in the field of policing, we have applied three different methods to three populations and obtained three sets of answers. None of these answers are entirely satisfactory, but by triangulating among the three we can reliably identify the most important innovations in police work over the past decade. Our experience has also led us to some tentative conclusions about the best methods for making such estimates in substantive fields.

5.1 Substantive Results

The important substantive results of our efforts lie in two domains: first, in learning more about the criteria that the field uses in evaluating innovations; second, in discovering which innovations the field thinks are important.

Criteria for Evaluation

Only the expert panel and the survey really provided useful information about the criteria used by the field to evaluate innovations. As a result, in this section we restrict our attention to the findings of these components of our efforts.

The expert panelists provided us with a laundry list of possible criteria. Among the most frequently cited were the following:

> Innovation was effective. It may have reduced crime, reduced the incidence of disorders and other incivilities, reduced fear, or simply satisfied the public, but it provided some end result of social value.
>
> Costs were reasonable. The innovation may have been cheap or expensive, but it provided substantial "bang for the buck."
>
> It was implementable. The innovation was within the capacity of the organization to conduct, and acceptable to the rank-and-file and the public.
>
> The innovation was strategically valuable to the department. It moved the organization in a useful substantive direction, exposed mid and top level managers to the challenge of innovation, or opened

the door to further innovations within the implementing agency.

The innovation provided valuable information to the field. The innovation established important facts about the performance of particular programs or administrative arrangements that the rest of the field could use.

Perhaps due to the conceptual complexity of the task, few expert panelists provided us with more than a few items, and fewer volunteered the entire list. Had we had a chance to read such a list to them, however, we suspect that the majority would have agreed that all were important.

Most Important Innovations

As with the criteria, the content analysis provided little guidance as to the most important innovations. The content analysis helped us to identify innovations, but were not helpful in evaluating them.

The expert panel, on the other hand, provided a clear ranking of important innovations. Table 11 reproduces the rankings reported for the expert panel above, and sets them alongside the rankings produced by the survey for convenience in analysis. The expert panelists ranked two strategic innovations (community-oriented policing and problem-solving policing) as a whole the most important. In fact, many of our panelists agreed that community policing and problem-oriented policing were in large part different

names for the same thing. So the most important message we received from our panelists was that a new strategic direction lay at the core of the most important innovations.

Three of the expert panel's top ten innovations are technologies, which are usually associated with professional (stage 2) policing. Nevertheless, many panelists justified their enthusiasm for technology on the basis of its capacity to further strategic developments. Mobile phones help put officers in close touch with citizens; computers in patrol cars help officers both collect and retrieve information helpful in responding to community needs. Repeat call analysis, an operational innovation that relies heavily upon computer technology, was also justified as a precursor and specific case of problem-oriented policing.

Similarly, the administrative changes were all consistent with the strategic direction of community problem-solving. Decentralization puts police decisionmaking authority closer to neighborhood level, so that officials can respond to neighborhood conditions and where citizens themselves have more influence. Education and training innovations were usually described as important because they responded to the need to grant line officers considerable discretion--the ultimate decentralization of authority. Participatory management is yet another way of increasing the extent to which operations respond to

neighborhood conditions. In fact, only two of the top ten innovations cited by our expert panelists would not contribute directly to this general change in strategic direction: repeat offender programs and automated fingerprint identification systems.[15]

The bottom ten innovations, shown in Table 11, seem, for the most part, to be refugees from a different time and place. Hiring civilians and women, directed patrol, asset forfeiture, and new ways of controlling high-speed chases and use of deadly force may all be important innovations, but all are associated with the professionalism of the 1960s and 1970s. It is less likely that the panel has rejected these innovations than that they do not think about them much anymore. As the best departments have opened the doors to civilians and women and obtained control over their officers' indiscretions, these once-critical innovations have passed into the realm of conventional wisdom.

Taken together, these results suggest that most of our expert panelists have developed internally consistent views compatible with the new strategic directions of problem-oriented and community-oriented policing. Innovations that advance these directions are important; innovations consistent with the old ways are not.

15 An argument can be made that repeat offender programs are an important precursor of community problem-solving. See Spelman & Eck (1989).

As Table 11 indicates, our survey respondents agreed in large measure with these views. Community policing was the top-rated innovation, and problem-oriented policing and patrol car computers easily made the top 10. But the dominant focus and internal consistency of the experts is less visible in the survey respondents.

Some of the top rated programmatic innovations selected by survey respondents -- namely, DARE, Asset Forfeiture, and Neighborhood Watch were not as highly rated by the expert panel. Moreover, these programs could be seen to be equally consistent with the emergent and the traditional strategy of policing. Insofar as DARE represents a concern with crime prevention and being responsive to community concerns, it fits with the newer strategies of policing. Similarly, insofar as Asset Forfeiture represents both a new source of revenue and a method for disabling drug dealers that goes beyond arrest and conviction, it, too, could be seen as part of the path towards new strategies of policing. And insofar as Neighborhood Watch represents an effort to mobilize citizens as an important first line of defense in preventing and controlling crime, it can be seen as central to the emergent strategy of community policing.

But these programs also fit comfortably within the traditional paradigm of policing. Ever since the police

introduced Police Athletic Leagues in the 1930's, police departments have been concerned with preventing crime by trying to keep kids on the straight and narrow path. Similarly, forfeiture is entirely consistent with traditional notions of deterrence and incapacitation of offenders. And ever since the 1950's, the police have beseeched citizens to "support their local police" with local self-defense measures.

Similarly, a top rated technological innovation, computer-aided dispatch systems, is often a component of community problem-solving strategies; but two forensic innovations, AFIS and DNA typing, are not. The top 10 list is rounded out by accreditation, an administrative innovation that to large extent systematizes old procedures (Mastrofski, 1988).

We offer two explanations for this small discrepency. The choice between them depends upon whether one is more worried about the biases inherent in the expert panel or those of the survey respondents.

Those prepared to take guidance from the judgments of the rank and file of police chiefs might argue that many chiefs now recognize community problem-solving as the future of police work. Unlike the experts, however, they believe that aspects of the old ways are still important. They are

realistic in believing that community problem-solving will never completely replace traditional police work, or (at least) that traditional police work will continue during the long process of implementing the new strategy. Thus innovations that further the professional model are still valuable.

Those less concerned with the selection bias of the expert panelists might offer a different explanation. Many police chiefs now recognize community policing or problem-oriented policing as the wave of the future, and when asked are willing to say so. But they do not really understand the fundamental changes these new strategies entail. They may equate community policing with particular programs such as foot patrol, for example, or problem-oriented policing with the solution to a particularly well-known problem such as domestic assault. As a result, they see these new strategies as no more than innovative operations to be added to the police repertoire.

These explanations are obviously too simple, but there is probably some truth in them both. Certainly some of our expert panelists seemed to consider the professional model of only nostalgic value, as though nothing inconsistent with the new directions could possibly be important. (This was particularly true of academics, no doubt because our simple ideologies are seldom challenged by

the harsh light of police work's daily routine.) And no doubt some of our survey respondents are hide-bound conservatives who parrot what is expected of them but do not fundamentally believe it.

A middle view seems most reasonable, however. Policing is definitely moving toward community problem-solving. The movement will take a long time, and even in the long run someone will need to handle calls for service and investigate crimes. Thus incremental changes in the professional model may be of diminishing importance, but they will always be of value. Our expert panelists are further along in thinking through the implications of the new strategies than most chief executives, but as a group they underemphasize the importance of incremental changes.

5.2. Methodological Results

Beyond these substantive findings, we learned a great deal about these different methods for gauging the most important innovations in a substantive field. A common problem in social science research is the validity and bias problems introduced by the methods themselves. Intensive interviewing, surveys, content analysis, and other methods tap systematically different dimensions of thinking--and sometimes shift this thinking--quite independent of the populations to which they are applied. In addition, some

methods are more convenient to apply than others. What we found mirrored the common expectations about these methods.

Intensive Interview/Expert Panel

The principal benefits of intensive interviewing are well known. It is fast and direct. It taps the expertise of those people who really ought to be experts. Because it is interactive, it allows the researcher to ask open-ended and conceptually complex questions withour fear that the subject will completely misunderstand. And it gives the subjects an opportunity to pose questions of their own, helping to lead us into areas to which we had given little thought.

The problems with this approach are equally well known, and we think it likely that we encountered them. Our conversations prodded people to think about things they had given little thought to in the past. As a result, we obtained off-the-cuff opinions that may be unreliable. For example, several respondents replied that they had never considered how to categorize police innovations before. Their responses suggested how they would think about the issue, but we would probably have received different answers had we given them more time to consider the question or even called them on a different day.

We may have obtained invalid answers to even simple questions, as well. In any interview, there is the chance that subjects will tell the interviewers what they want to hear. All of our expert panelists were aware of some of our own opinions on police innovation issues, and other interviewers with different opinions may have obtained different results. There is even some evidence that each of us obtained slightly different responses from the other: Moore, who is associated with the strategic innovation of community policing, collected more favorable references to this strategy than Spelman, who is a proponent of the (somewhat) competing strategy of problem-oriented policing.

A related problem is more difficult to control: even if our views did not affect what our respondents told us, these views may have affected what we understood our respondents to say. Despite our attempts to develop and use a systematic interview protocol, our interviews resembled conversations more than structured surveys. This probably helped us collect more information, and on balance it made more sense for the population we were interviewing than lockstep application of a questionnaire. But it also led some interviews into idiosyncratic digressions.

Mail Survey

Mail surveys are are a fast and fairly direct means of asking simple questions of a large population. If the questions are straightforward and response rates are good, a mail survey can produce valid data. Although at 51 percent our response rate was only adequate, there was no indication of response bias; it appeared that few of our respondents had trouble understanding what we wanted. So most of our results are probably fairly reliable indicators of the population surveyed.

Like all mail surveys, ours was less successful at complicated questions of fact and opinion. Some of our questions may have required respondents to fit square pegs into round holes. For example, we asked respondents to use a three-point Likert scale to measure the importance of five dimensions of value as they applied to each of 30 innovations. Judging from the results of our intensive interviews, it is probable that many of our survey respondents had never considered the importance of, say, external political pressures on their decision to implement automated fingerprint identification systems. Even if they had, they were probably more likely to have considered specific constituencies (the city council, the local newspaper), or specific forms of pressure (unwillingness to fund increases in the detective bureau, stories on the low burglary clearance rate).

Aggregating these conflicting responses into a single dimension, and then boiling it down to one of three possible answers, is a conceptually complex task. Although many of our respondents seemed to have no trouble in performing it, others besieged us with phone calls asking for clarification. Whether most of our respondents carried out this task in about the same way is an open question.

As in all mail surveys, it was never clear who was being surveyed. We asked that the chief fill out the form, and we know that some of them did so. But an unknown number passed the form on to a staff member, whose opinions and access to facts may not have coincided with the chief's. And it is not at all clear that the chief was the best person to survey anyway, since they may or may not be actively thinking about the most important innovations in the field.

We conclude that the survey is fairly reliable for simple opinions (the top ten list) and facts (the adoption status of 30 innovations in each agency). It is less reliable for opinions about the multidimensional importance of each innovation, or for finely grained comparisons of the relative importance of any innovation.

Content Analysis

The great benefit of content analysis is that it is nonintrusive. Unlike surveys or interviews, content analysts do not unwittingly create opinions or force spur-of-the-moment decisions. And, although subjectivity may enter into coding, at base it relies entirely on objective facts. Thus coding, recoding, and further recoding are always a possibility.

In practice, we received few of these presumed benefits. The analysis proved much more time-consuming than expected, and time pressures led coders to make difficult judgment calls in unreliable ways. Because technological changes were more obviously innovative than others, we probably caught them all at the expense of more amorphous innovations. Because our coders shared our own biases for strategic innovations--and because our definition of "strategic" was perhaps too flexible--we probably coded more innovations as strategic than was appropriate. The proper unit of analysis was the innovation, not the article, but in practice the two were equated. Few of the articles provide all the information we were looking for; in particular, few provided the date of adoption, costs, side-effects, or prior literature. So we were unexpectedly faced with much missing data.

On balance, we were simply too ambitious in our expectations for the content analysis. In attempting to

conduct such an analysis at the beginning of this project, rather than at the end, we forced our coders to make difficult judgments with little guidance. Although minimal information is probably reliable--the name and nature of the innovations considered in the journal--the contextual information on which we expected to rely was unreliable or unavailable.

Conclusions

Applying these three methods to our basic research question should produce results with offsetting biases. We expect that the list produced by intensive interviews to be fairly valid, because we were able to rely on the context and interactivity of the interview to help us make sense of our panelists' responses. But conceptually complex answers are unreliable, and all answers are probably biased somewhat by our own opinions. We expect the list produced by the mail survey to be reliable, but an incomplete approximation for the way people really think about these complicated issues. The content analysis list is needlessly complicated due to unreliable coding, and incomplete due to unreliable and biased selection. Still, the journal articles studied may provide background information as to the nature and objectives of the innovations described that is otherwise unavailable.

5.3 Conclusions: A Strategy to Identify Important Innovations

To identify important innovations in a field we suspect that a content analysis of a widely read professional journal is a good place to start. It may be better to conduct it informally than to expect much to be gained from formal search, coding, and analysis procedures. Analysts could get most of the value by simply skimming a bunch of journals and noting whatever looks innovative. If the journal is indexed in *Lexis/Nexus*, *Public Affairs Information Service*, or a similar service, the analysts may be able to save themselves the trouble of reading irrelevant articles.

Some of the problems we encountered in the content analysis are probably unique to the journal we analyzed, but others are probably generic: the enterprise is very time-consuming; many judgment calls need to be made, so the coders need to be trained and preferably should confer with one another often while collecting data; editorial policies will affect the results in unpredictable ways that are irrelevant to the importance of the innovations studied. The first two can be controlled by the researcher, but if the journal systematically underrepresents the most important innovations (as we suspect ours did), there may be little to be gained except a laundry list of candidate

innovations. On the other hand, if a journal can be found that is aimed directly at the readership of interest (in our case, big-city police managers and executives), a full-blown content analysis may be a useful approach.

Our experience suggests that identifying and surveying those judged by their peers to be expert was a good idea, especially if they are willing to provide some help in thinking about the issues. We talked to our panelists only once, but we suspect we would have gained more by talking to them several times, perhaps through the use of Delphi or other iterative group techniques. The problem with any iterative method is time: if the initial discussions cannot be conducted over a short period (perhaps two or three weeks), many of the panelists may become impatient and either drop out or fail to give the enterprise their full attention. Given the difficulties we had in contacting and scheduling interviews with our panelists, we suspect iterative interviews may be impractical for opinion leader groups. In any case, we probably got most of the information there was to be gotten in one pass.

Although the sample survey proved to be a good idea, it is far better to do it small and right than big and wrong. Asking a large sample to provide a top ten list is almost certainly sufficient. Had we restricted our survey to so short a form, we would probably have obtained a much

higher response rate, and thus a much reduced problem of response bias. Because the vast majority of respondents apparently referred to the closed-ended section of the questionnaire in answering the open-ended section, we may also have guided their responses too much. The additional information we obtained from the closed-ended section was interesting, but unnecessary to our basic purpose of identifying important innovations.

Thus, we suggest that the combination of approaches we employed is better than relying on any one alone. For any given project, it is probably to do a little of each than to bank entirely on one method. That, at least, is our conclusion in the field of policing. We hope to learn what others experiences are as they try to identify important innovations in other substantive fields.

List of Tables

Table 1
Expert Panel Nominations of Innovations

Particular Innovation	Number of Votes
POP	15
Computers in Patrol Cars	14
COP	12
Crime Analysis	11
Repeat Call	11
AFIS	10
Geographic Decentralization	9
Repeat Offenders	9
Education & Training	9
Mobile Phones	8
Participating Management	8
Disorder & Fear	7
CAD	7
DNA	7
Special Population	7
Accreditation	7
Call Screening	6
Street Level Crime Prevention	6
Neighborhood Watch	6
Mission--Administration	6
DARE	6
Domestic Assault	6
Hostages	5
Foot Patrol	4
Openness	4
Discipline	4
Affirmative Action	4
Performance Evaluation	3
Drunk Driving	3
Civilianization	2
Use of Force	2
High Speed Auto	2
Women	2
Victim Assistance	1
Hate Crimes	1
Asset Seizure	1
Master Patrol	1
Directed Patrol	1
Police Nets	1

Table 2. "Top 10" and "Very important" ratings for thirty innovations.

Innovation	Percent "top 10"	Percent "very important"	Normal score
Community policing	40.8	60.4	2.07
DARE	36.1	63.9	1.90
Asset forfeiture	31.9	63.9	1.67
AFIS	30.1	66.3	1.64
CAD	29.9	60.9	1.49
DNA typing	24.8	46.2	0.86
Neighborhood watch	26.1	40.2	0.78
Problem-oriented policing	28.1	33.7	0.73
Patrol car computers	20.9	40.2	0.78
Accreditation	15.9	32.0	0.02
Participatory management	17.1	26.7	-0.04
Mission/values statements	22.1	13.0	-0.11
Interagency communication	19.4	17.8	-0.14
Domestic assault programs	15.1	26.0	-0.17
Civilianization	15.1	25.4	-0.18
Call screening	16.0	21.9	-0.22
Crime analysis	17.4	18.3	-0.23
Victim assistance	17.3	17.8	-0.25
Affirmative action	15.6	16.0	-0.39
Directed patrol	11.1	17.2	-0.60
Street drug enforcement	13.9	10.7	-0.61
Foot patrol	13.5	6.5	-0.73
Disorder/fear programs	12.1	5.9	-0.82
Hiring women	10.7	8.9	-0.82
Decentralization	10.1	10.1	-0.83
Repeat offender programs	6.4	11.8	-0.99
Hate crimes	8.5	3.6	-1.07
Special populations	8.0	4.1	-1.09
Mobile phones	4.6	11.2	-1.10
MPO rank	5.9	1.2	-1.27
mean	18.2	26.1	
standard deviation	9.3	20.3	

Table 3. "Important" ratings for thirty innovations.

Innovation	percent "important"
Asset forfeiture	96.7%
DARE	94.6
Neighborhood watch	92.6
AFIS	92.0
CAD	90.4
DNA typing	89.5
Community policing	88.2
Crime analysis	86.8
Domestic violence programs	86.7
Civilianization	85.5
Mission/values statements	85.5
Directed patrol	85.2
Victim assistance	84.7
Hiring women	84.3
Participatory management	84.2
Patrol car computers	83.8
Problem-oriented policing	82.2
Disorder/fear programs	81.8
Repeat offender programs	81.6
Affirmative action	80.5
Call screening	80.0
Street drug enforcement	78.1
Special populations	76.8
Decentralization	76.1
Hate crimes	74.6
Mobile phones	73.8
Foot patrol	70.7
Accreditation	64.8
Master Police Officer rank	63.7

Table 4. Why Thirty Index Innovations are Important.

innovation	issue	effective	cost	ext'l	int'l	overall
Accreditation	.812	.681	.059	.884	.716	.807
Affirmative action	1.241	.795	.270	1.013	.667	.961
AFIS	1.364	1.134	.031	.712	1.080	1.221
Asset forfeiture	1.258	1.179	.705	.812	1.151	1.286
Case screening	1.110	.987	.566	.486	.947	.960
Civilianization	1.026	1.020	.586	.758	1.020	1.007
Community policing	1.275	1.128	.229	1.346	1.076	1.309
Computer-aided dispatch	1.214	1.154	.116	.785	1.168	1.204
Crime analysis	1.107	.928	.234	.741	.959	1.042
DARE	1.477	1.204	.274	1.452	.855	1.307
Decentralization	.974	.853	.159	1.027	.824	.862
Directed patrol	1.113	.970	.492	.926	.837	.963
Disorder/fear programs	1.009	.767	.372	.981	.689	.939
DNA typing	1.162	1.031	.038	.602	.780	1.143
Domestic violence programs	1.231	.908	.465	1.057	.680	1.018
Foot patrol	.950	.802	.212	1.044	.620	.842
Hate crimes programs	.947	.676	.410	.863	.573	.831
Interagency communication	1.183	1.031	.701	.884	.963	1.121
Master Patrol Officer rank	.755	.602	.257	.275	.630	.696
Mission/values statements	1.123	.937	.729	.876	.992	1.076
Mobile phones	.833	.845	.143	.434	.775	.785
Neighborhood watch	1.246	1.133	.672	1.302	.970	1.199
Participative management	1.053	.942	.788	.634	.986	1.014
Patrol car computers	1.112	.964	.007	.375	1.076	1.047
Problem-oriented policing	1.116	1.000	.394	1.126	.946	1.104
Repeat offender programs	1.068	.800	.254	.687	.708	.880
Special populations	.970	.771	.319	.935	.649	.848
Street drug enforcement	1.094	.878	.232	.922	.593	.920
Victim assistance	1.143	.972	.308	1.113	.735	1.020
Women patrol officers	.975	.893	.468	.948	.776	.950

Note: All figures are means of a two-point scale, with 2 = very important, 1 = important, 0 = not important.

Table 5. **Best Predictors of Overall Importance.**

innovation	regression coefficient	standard error	two-tailed t probability
Importance of issue addressed	.2824	.0143	.0000
Effectiveness of innovation	.2730	.0154	.0000
Improves internal capacity	.1978	.0142	.0000
Improves external support	.1687	.0137	.0000
Cost and difficulty of implementation	.0360	.0113	.0015

Note: Regression coefficients for all independent variables are standardized. $R^2 = .6144$. Standard error of estimate = .3780. $F(13,3598) = 440.59$, $p << .0001$.

Table 6

Types of Innovation

	Conservative Definition of Strategic	Liberal Definition of Strategic
Programmatic	33%	19%
Administrative	26%	21%
Technological	34%	33%
Strategic	7%	21%

Table 7

Problems to Which the Police Were Responding With Innovations

1.0	**Crime**	**49%**	
	1.1 General		21%
	1.2 Robbery		2%
	1.3 Burglary		7%
	1.4 Rape		0%
	1.5 Domestic Violence		2%
	1.6 Child Abuse		5%
	1.7 Drugs		12%
2.0	**Youth Crime**	**16%**	
	2.1 Delinquency		7%
	2.2 Youth Gangs		5%
	2.3 Truancy		2%
	2.4 Latchkey Kids		2%
3.0	**Community Relations**	**14%**	
	3.1 General		9%
	3.2 Hate Crimes		2%
	3.3 Alienated Youth		2%
4.0	**Traffic**	**12%**	
	4.1 General		2%
	4.2 Drunk Driving		2%
	4.3 Speeding		5%
	4.4 Parking		2%
5.0	**Fear**	**5%**	
6.0	**Social Emergencies**	**0%**	
7.0	**Other**	**5%**	
	7.1 Terrorism		2%
	7.2 Civil Emergencies		2%

Table 8

Methods Police Were Using

1.0	"Traditional Methods"	52%	
	1.1 Arrest		4%
	1.2 Investigation		18%
	1.3 Patrol		6%
	1.4 Directed Patrol		10%
	1.5 Multi-Agency Task Forces		6%
	1.6 Presence		2%
	1.7 Liaison		6%
2.0	New Methods	48%	
	2.1 Foot Patrol		6%
	2.2 Mini Stations		4%
	2.3 Victim Services		0%
	2.4 Social Services		0%
	2.5 Counseling		0%
	2.6 Direct Referral		2%
	2.7 Education		10%
	2.8 Victim Resistance		6%
	2.9 Community Mobilization		4%
	2.10 Volunteers		4%
	2.11 Problem Solving		4%
	2.12 Crime Prevention		8%

Table 9

Groups to Whom Police Were Responding

1.0	General Citizenry		36%
2.0	Juveniles		24%
	2.1 General	8%	
	2.2 School	16%	
3.0	Local Community		12%
4.0	Drivers		10%
5.0	Women		10%
6.0	Elderly		4%
7.0	Residents of Housing Projects		2%
8.0	Minorities		2%

Table 10

The Focus of Administrative Innovations

1.0	**Performance Measurement**	**13%**	**(Aggregate)**
	1.1 Crime Reporting		7%
	1.2 Performance Standards		7%
2.0	**Organizational Structure**	**13%**	
3.0	**Human Resource Management**	**47%**	
	3.1 Performance Appraisal		7%
	3.2 Rewards for Performance		3%
	3.3 Affirmative Action		3%
	3.4 Safety		10%
	3.5 Fitness		3%
	3.6 Counseling		3%
	3.7 Families		3%
	3.8 Training		17%
4.0	**Manpower Scheduling**	**3%**	
5.0	**Cost Controls**	**20%**	
	5.1 General		7%
	5.2 Automation		13%
6.0	**Communications**	**0%**	
7.0	**Facilities**	**3%**	

Table 11

A Comparison of Expert Panel and Survey Rankage of Police Innovations

Expert Panel	Survey
POP	COP
	DARE
Computers in Patrol Cars	Asset Forfeiture
COP	AFIS
Crime Analysis/Repeat Call Analysis	CAD
AFIS	DNA Typing
Geographic Decentralization	Neighborhood Watch
Repeat Offenders	POP
Education & Training	Computers in Patrol Cars
Mobile Phones	Accreditation
Participatory Management	Mission/Value Statement
Disorder & Fear	Participatory Mgmt.
CAD	
DNA	
Special Population	
Accreditation	