DESIGNING AN IDEAL CONCEPT OF POLICE FOR MEXICO CITY

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ABSTRACT
Mexicans are fearful and concerned not only about the increasing number of crimes of all kinds that has permeated the fabric of their cities and communities, but also about the increasing number of crimes committed by the law enforcement itself. These are unfit for purpose, characterised by corruption practices and low level of education and training. Often, the law enforcement officers have violated civil rights of ordinary citizens, and even murdered several members of civil organisations. Moreover, organised crime has permeated the structural organisation of law enforcement institutions. This has led many police officers to become involved in organised crime. What would be the ideal concept of police for Mexico City? What needs to be changed? What changes need to occur in order to address public safety more effectively? There is a need to reformulate the concept of the police officer. This paper presents a particular approach that has been employed in order to develop an ideal concept of police for Mexico City law enforcement institution. It is hoped that this concept might help the decision-makers to change the current concept of police so that they can address crime and at the same time protect civilians more effectively.

Keywords: creative design, crime, grounded theory, police concept.

1 INTRODUCTION
Mexicans are fearful and concerned not only about the increasing number of crimes that has permeated the fabric of their cities and communities \cite{1, 2}, but also about the number of crimes committed by the law enforcement itself. It seems that law enforcement institutions are unfit for purpose, characterised by corruption practices, and low levels of education and training. Often, the law enforcement officers have violated civil rights of ordinary citizens, such as unlawful deprivation of life, kidnaps, arbitrary arrest, arbitrary interference with privacy, and disrespect for civil liberties \cite{3, 4}. Moreover, many police officers are part of organised crime \cite{5}.

Not only the organised crime has increased, but also the violation of political rights has increased. For example, the murder of 45 indigenous people in Acteal, Chiapas (1997) and 17 in Aguas Blancas, Guerrero (1995); more recently, the uncontrolled use of the law enforcement officers to control demonstrations has violated civil rights of ordinary citizens, and even the murder of several members of civil organisations in Atenco and Oaxaca (2006) \cite{2}. Both academia and the public sector have paid significant attention to the development of approaches to crime prevention and control issues, but little attention has been given to the redesign of the police concept and policing practice. There is a need to reformulate the concept of police and policing in order to ensure public safety. This research project addresses the following questions: What would be the ideal concept of police for Mexico City? What needs to be changed? What changes need to occur? It uses the method of Grounded Theory in order to analyse the data gathered in ‘the police we want’ by NGOs for Mexico City \cite{6}. This identifies what to change in the police concept of police officer. Then, it uses creative design principles in order to develop an understanding of an ideal police concept for Mexico.
City. This is, it identifies what to change so that new police concepts might emerge. In the remaining sections of the paper, crime science and creative design, policing in Mexico, the emergence of an ideal police concept, and conclusions and further research are presented.

2 CRIME SCIENCE AND CREATIVE DESIGN

2.1 Crime science

Approaches to crime have evolved from trial and error to methods and techniques of science. Law enforcement and related institutions have been working hard to dismantle long-standing barriers that separate them from scientific methods and the traditional way of approaching crime. This way of approaching crime is known as crime science. Crime science embraces among others, disciplines such as engineering design, biochemistry, material science, criminology, psychology, sociology, communications, artificial intelligence, zoology, and ecology [7]. Significant developments in the theory of policing have taken place over the last few years. There is a growing importance of a cluster of concepts such as intelligence, knowledge, information technology, data mining, and networks [8]. Special attention has been given to the development and implementation of intelligence models in order to understand the criminal environment, assist decision-makers and make an impact on the criminal environment [9]. There is an increasing importance of an effective communication of violence risk information to forensic decision-makers [10]. With the aim of improving police performance, there has been an increasing interest in higher education in crime and justice studies in order to professionalise the police [11].

Community policing consists of community-oriented and problem-oriented policing [12]. The community-oriented policing focuses on fear of crime and better relations with the community than on crime itself. Problem-oriented policing, on the other hand, focuses on identifying and solving problems that cause disorder and crime at micro level. Although law enforcement institutions have achieved significant progress, organised crime has adapted successfully to the process of globalisation, law enforcement institutions still experience difficulties in dealing with it [13]. These institutions are making significant efforts to incorporate new crimes such as bias crime, cyber-crime, and stalking into their responsibilities [14]. McLaughlin [15] examines how the police constable, known as ‘bobby on the beat’, the foundation stone of English policing was created. This concept of the police officer in many countries has acquired a representative status that supports the culture and beliefs of the people. Famega et al. [16] contend that police work is both reactive and proactive. It is reactive because police officers know in advance their workload for the uncommitted portion of their patrol time. The proactive aspect of patrol work is still ambiguous because the conduct and effect of preventive patrol are not clear, and many of the self-initiated activities are not strictly crime or non-crime related.

2.2 Creative design

Design is a conscious process by which an idea is transformed into tangible or intangible products [17]. Engineers use this process, including tools and methods for solving problems, meeting needs, improving situations, or creating something new. Improving existing products is normally called incremental innovation, and at the other end of the continuum creating totally new products is known as radical innovation. Innovation is about adding or creating value. For this reason design is recognised as a creative process. Historically the decision-making in the design process has been through trial and error. This approach has been enhanced by methods such as brainstorming [18], morphological analysis [19], and synectics [20] aimed
at breaking what is believed to be mental blocks when developing new solutions. More advanced approaches to idea generation emphasise on the systematic decomposition and analysis of the design problem [21]. These methods are based on knowledge-based principles and the application of physical and chemical phenomena.

According to Simon [22], creativity is the ability to produce something that is both novel (original or unexpected) and appropriate (useful). Creative people use what already exists and change it into something that did not exist before. Because creativity has to do with the production of new ideas, it involves cognition that seems only to occur within a framework of associated motivational, attitudinal, and personality traits. The combination of components in a new way generally involves perception of an analogy. For example, Alexander Graham Bell was puzzled that a small membrane in the human ear, the ear drum, could vibrate powerful enough to move the solid bones which made up the ear’s mechanism. The analogy is that a similar membrane could be used to control the flow of an electric current in response to the air waves made by sound. This insight was the breakthrough that Bell used to invent the telephone. But the analogy might come from an engineering point of view. Altshuller [21] states that an ideal machine is a machine that performs a desired function without actually existing. This machine is weightless, has no cost, does not occupy any space or produce any harm. The underlying point is that there is no need for the system or machine, rather there is the need for the useful functions provided by the system.

Recent research into design and crime has explored the ability of design to approach crime in the design process [23–27]. Armitage and Pease [28] develop and propose a mechanism to assess the risk of theft of electronic products and to take steps to implement the mechanism in practice. Whitehead et al. [29] present a review of antitheft designs relating to mobile phones, then discuss the characteristics of secure products, forming the acronym ‘IN SAFE HANDS’: identifiable, neutral, seen, attached, findable, executable, hidden, automatic, necessary, detectable, and secure. These characteristics intend to assist designers to reduce the frequency of theft of electronic products.

2.3 Approaching crime in Mexico

Over the last few years, there has been a great effort by the Mexican governments, NGOS, and academic institutions to reduce crime. In general it is believed that the lack of an effective control system leads to the poor performance of the Mexican law enforcement organisation [30]. It is argued elsewhere [31] that the preventive police has no clear functions since it performs administrative functions rather than ensuring order. Also, it is argued by researchers that policing in Mexico City is characterised by lack of crime investigation, making illegal profits and abuse [32]. What would be the ideal concept of police for Mexico City? It is generally accepted that in order to change this, there is the need for resources for training and education, and a reduction corruption practices [33, 34]. Piccato [35] analyses the perception of crime during the last century in Mexico City. Other studies develop measures of social constructs, such as interpersonal trust, networking, membership, fear, well-being, and institutional trust [36].

3 POLICING IN MEXICO

3.1 A situation of crime in Mexico

The worldview adopted here in order to develop an insight into the context of crime in Mexico is the emphasis on change, wholeness, and constitutive relations. In order to develop
an understanding of crime reality one begins with the questions: What exists? What needs to be changed? What changes need to occur? How to cause the change? It is assumed that crime reality is made up of fundamental processes of change. Crime is organised into coherent wholes. From this perspective, one cannot think of the parts that constitute crime systems as separate elements that come together to make wholes. For the very nature of the parts is determined by the wholes in which they participate. A fundamental insight gained from this perspective is the idea of design capability. Broadly defined, design capability refers to the combined or co-operative effects. It is the consequence of the interactive relations of parts, elements or individuals that constitute a system. These interactions impose limitations between parts. Each part of the system is able to generate its maximum effect. The output of each individual part affects the output of all other parts. The combination of all the parts’ outputs and their interaction complete the total system. The effects produced by the total system are different from what the parts can produce alone.

In practical terms, two models namely structural and parametric have been built in order to grasp the reality of the security management system in Mexico. A system’s structural model is a representation of the system overall structure in recursive levels [37] (Fig. 1). Location of an element or part within the whole of which it is a part directs attention from an element or phenomenon being considered to the larger wholes of which it is part. From this model, three general categories of information can be identified. First, it describes a system’s composition, i.e. what describes the system’s constituents. For example, three levels of elements, such as the federal and states executives, ministries of public security, and the police force level (system-in-focus) are shown in the structural model. Second, the structural model describes the system configuration, i.e. how the constituent components are related to each other. For example, police force subsystems pertain to the ministries of public security, which in turn belong to the federal and states executives system. And this is part of a higher level of recursion: law enforcement system. Finally, the important role of a structural model lies in the fact that it is the basis for acquiring key characteristics of its components and their relationships. These characteristics constitute the parametric model, as shall be shown below. A key characteristic is a parameter that significantly influences the state of the system.

Figure 1: The structural model of the law enforcement system in Mexico.
3.1.1 Law enforcement system
The federal, states and district executives are at the top level of the law enforcement system (Fig. 1). Their main function is *inter alia* to execute policies and plans in order to control crime. The next level consists primarily of the ministries of public security (SSPs), and the general attorney of the republic (PGR); also, there are attorney’s offices at state levels (PGJEs) and the Federal District (PGJDF). The PGR, PGJEs, and the PGJDF are in charge of investigating crimes and prosecuting suspects under their jurisdiction, procuring, evaluating and presenting evidence before courts, recommending that sentence be imposed, and ensuring that the legal rights and guarantees of defendants, including the right to due process, are fully respected. The SSPs are in charge of enforcing the law. These institutions also have the responsibility for investigating complaints of human rights violations by law enforcement officers under their jurisdiction.

3.2 The system-in-focus and data analysis
The system of interest or in focus here is the ministries of public security (Fig. 1). In particular, the system-in-focus is the Federal District Police Force that shall be called from now police for Mexico City. The information gathered by NGOs [6] was used to construct the parametric model for this system. The NGOs, such as the Human Rights Commission of the Federal District, civil organisations, and some Universities were involved in the process of consulting ordinary citizens of Mexico City regarding suggestions and opinions on, and how to improve the police force of Mexico City.

The analysis of these suggestions and opinions follows the Grounded Theory (GT) as proposed by Glaser and Strauss [38]. GT investigates the actualities in the real world and analyses the data with no preconceived hypothesis. Data collection is usually but not exclusively by interviews. Data analysis involves searching out the concepts behind the actualities by looking for codes, then concepts and finally categories. GT coding is a form of content analysis to find and conceptualise the underlying issues amongst the noise of the data by highlighting an issue of interest to the researcher from the words and phrases of the interviewee. This is noted and described in a short phrase. This issue may be mentioned again in the same or similar words and is again noted. This process is called coding and the short descriptor phrase is a code. The process of coding should be performed with an open mind without preconceived ideas. Codes emerge from identifying key-points to addressing research questions. The codes are then analysed and those that relate to a common theme are grouped together. This higher order affinity is called a concept. Concepts are then grouped and regrouped to find yet higher order commonalities called categories. It is these concepts and categories that lead to the emergence of a theory. If the data are analysed without a preconceived theory or hypothesis, that theory is truly grounded in the data because it came from nowhere else.

4 THE EMERGENCE OF AN IDEAL POLICE CONCEPT
In order to develop alternative police concepts, conceptual design requirements or needs have to be defined from the data. The emergence of GT concepts is presented first; next the emergence of categories, or design requirements as called here, are presented. These requirements or categories are analysed from the perspective of change, wholeness and interactive relations in order to gain further insight into the generation of police concepts. The last part of this section intends to answer the questions: What needs to be changed? What changes need to occur?
4.1 The emergence of GT concepts

Table 1 depicts some of the codes and concepts obtained from the data analysis. The code ‘incorruptible’ emerged from ‘incorruptible police in the entire organisation’ ($P_1$). The codes from all other key points were compared with this to see if similar codes occurred often. The following codes were considered to have affinity: ‘honest’ from $P_2$; ‘should not bribe’ from $P_3$; ‘corruption’ from $P_4$; ‘profits from corruption’ from $P_5$; ‘extortionate police’ from $P_7$. The common characteristic is ‘incorruptible and honest’ and this was one of the concepts to emerge from the data.

<table>
<thead>
<tr>
<th>I.D.</th>
<th>Key point</th>
<th>Code</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_1$</td>
<td>Incorruptible police in the entire organisation</td>
<td>Incorruptible</td>
<td>Police should be incorruptible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Honest</td>
<td>and honest</td>
</tr>
<tr>
<td>$P_2$</td>
<td>Police should be honest in the entire organisation</td>
<td>Should not bribe</td>
<td>Corrupt is more profitable</td>
</tr>
<tr>
<td>$P_3$</td>
<td>Police should not bribe citizens or offenders</td>
<td>Corruption</td>
<td></td>
</tr>
<tr>
<td>$P_4$</td>
<td>There are corruption acts in all levels of the organisation</td>
<td>Profits from corruption</td>
<td></td>
</tr>
<tr>
<td>$P_5$</td>
<td>Police get more profits from corruption activities</td>
<td>Protection</td>
<td></td>
</tr>
<tr>
<td>$P_6$</td>
<td>Police protect criminals</td>
<td>Extortionate police</td>
<td></td>
</tr>
<tr>
<td>$P_7$</td>
<td>Bosses extortionate police officers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$P_8$</td>
<td>Police with good manners</td>
<td>Good manners</td>
<td>Education</td>
</tr>
<tr>
<td>$P_9$</td>
<td>Police with knowledge of basic functions</td>
<td>Professional culture</td>
<td>values and policing</td>
</tr>
<tr>
<td>$P_{10}$</td>
<td>Police with academic degree</td>
<td>Education</td>
<td>culture</td>
</tr>
<tr>
<td>$P_{11}$</td>
<td>Police with values and citizenship</td>
<td>Values and citizenship</td>
<td>Professional</td>
</tr>
<tr>
<td>$P_{12}$</td>
<td>Training and courses on values, reliability, emotional, working consciousness and human reltions</td>
<td>Training and courses</td>
<td>police</td>
</tr>
<tr>
<td>$P_{13}$</td>
<td>High quality and efficient training by professionals</td>
<td></td>
<td>Continuous training on values by professionals</td>
</tr>
<tr>
<td>$P_{14}$</td>
<td>Decorous salary for police officers</td>
<td>Salary according to duties</td>
<td>Attractive salary</td>
</tr>
<tr>
<td>$P_{15}$</td>
<td>Salary according to the performance of police officers</td>
<td>Good salary</td>
<td>and incentives</td>
</tr>
<tr>
<td>$P_{16}$</td>
<td>Salary according to the profile of police</td>
<td>Fair salary</td>
<td></td>
</tr>
<tr>
<td>$P_{17}$</td>
<td>Good and fair salary for police officers</td>
<td>Attractive incentives</td>
<td></td>
</tr>
<tr>
<td>$P_{18}$</td>
<td>Better incentives for good performance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From $P_8$ to $P_{13}$ emerged ‘good manners’, ‘professional culture’, ‘education’, ‘training and courses’, and ‘values and citizenship’. Combining these led to the concepts of ‘education on values and policing culture’, ‘continuous training on values by professionals’. Other combinations were identified and recorded. Confidence in the process of coding grew and uncertain subsiding with experience of the method.

The process of comparing the codes with each other, to find higher order affinity, produced the concepts from the codes. Some concepts from the whole process are summarised in Table 1.

### 4.2 The emergence of categories

By comparing each concept in turn with all other concepts, further commonalities are found which form the even broader categories. By applying the constant comparison technique to each concept in turn, an affinity theme was found amongst the following concepts: ‘police should be incorruptible and honest’ and ‘corruption is more profitable’. These share the theme of ‘police should be incorruptible and honest’. By comparing the other concepts and grouping common themes new categories emerged, as shown in Fig. 3.

The emergent grounded theory of an ideal concept of police can be summarised as a set of attributes that collectively form a mechanism to assist the effective design and control of police officers for Mexico City. The usefulness of an ideal concept will be impaired if the benefits from it are not recognised and supported among decision-makers. This system of attributes will assist in identifying conflicting aspects by analysing their interactions and relationships between them so that a more radical concept of police can be created, as shown in the next section.

### 4.3 Generating alternative police concepts

Public safety and security may be characterised by complexity and novelty by the fact that the traditional way of looking at public safety and security problems assumes that constitutive parts are the same when examined singly as when they interact with each other within the whole situation. A description of the law enforcement system situation as a whole, structurally

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**Figure 2: Emergent categories and theory from grounded theory analysis.**
and functionally, helps to see constitutive relations. The breaking down of a single whole directs the analyst to identify contradictory parts. In general, a contradiction, according to creative thinking [21], refers to the propositions which emphasises apparently incompatible or opposite issues. It must be emphasised that the core idea behind a contradiction is not the opposite between two parts external to one another, but the contradiction which is at the essence of a part, in this case a police officer (Fig. 4).

The structural model of law enforcement reality in Mexico shows what exists (Fig. 1). Figure 4 shows what to change. It shows mutually opposing parameters, rows and columns of the matrix, that describe the state of a police officer. Due to this, they are called parametric contradictions. Each represented with its degree of importance; unrealible vs reliable performance as being the most important. The complexity of the ideal police, considering two states of each parameter, is $2^{26}$, i.e. the number of possible police concepts for Mexico city. The model also shows the interaction, together with positive and negative implications, of each state of the parameters. These interactions are called interactions parameters contradiction. Both the parametric and the interaction parameters contradictions define the design capability. Overcoming these contradictions would produce the ideal police officer concept. It should be emphasised that human systems are different, i.e. they are stochastic or probabilistic systems. Technological systems on the other hand are deterministic systems. This

Figure 3: A parametric model of the police officer for Mexico City.
means that in order to eliminate the negative consequences of the parameters shown in the column of the matrix of the parametric model (Fig. 4) is necessary to involve psychology, management and other social disciplines.

For example, the higher and horizontal levels of the law enforcement management system (Fig. 1) cause barriers to changes in the current practice of policing in order to improve the reliability of the performance of the police officer. This is chiefly due to the endemic practice of impunity and corruption at all levels of the management system.

4.3.1 What to change?

In order to cause the desired change, one needs to define a design capability for each parameter shown in the parametric model (Fig. 4). For example, the design capability for the most important contradiction: unreliable versus reliable performance (Fig. 5) is: when the police officer performance is reliable it achieves its function but it has to change its current practice of policing and this is restricted by other levels of the management system. And the police officer performance has to be unreliable in order to maintain the status quo and highly reliable in order to achieve its function of protecting citizens.

Similar design capabilities can be defined for the next most important contradictions: corruptible/dishonest versus incorruptible/honest, no vocation for policing versus vocation for policing, uneducated/untrained versus educated/trained, and ineffective communication versus effective communication.

4.3.2 What to change to?

Figure 5 shows further details of the design capabilities for the ideal police officer concept. It intends to assist in understanding the design problem, and offers a number of solution triggers. For example, challenging the assumptions underlying the B and D links might induce a thought more rigorously about whether it is correct that only the police officer can achieve reliable performance and incorruptible/honest acts, for example. What factors are responsible for achieving reliable performance and incorruptible/honest acts? Do these factors exist in other parts of the management system?

In the same way, similar challenges to the C and D causal links suggest that there is a strong possibility that this situation is solvable by means other than overcoming the identified contradictions. For example, regarding the C and D links, there is an implicit assumption that a police officer is unaware of the effect he/she has on other parts, such as the citizen or crime system, or that he/she is unaware of the effect that other parts have on the overall performance.
of the law enforcement system. It is thus difficult to see that if the police officer was made aware of what he/she is doing that he/she would continue to do it.

The major point from this is that this process of analysing the problems of the law enforcement system offers problem solvers and decision-takers a number of effective solution triggers which traditional approaches to policing would not generate. In this case it appears likely that the process presented here provides more potential solutions, i.e. ideal police concepts rather than the small changes currently being implemented in the law enforcement system.

5 CONCLUSIONS AND FURTHER RESEARCH
This paper presented the preliminary results on the design of an ideal concept of police for Mexico City. Emphasis is placed on change, wholeness and constitutive relations in order to develop an understanding of the context of policing in Mexico. Two models namely structural and parametric were developed to gain further understanding of the policing situation. The structural model describes the constitutive relations of the law enforcement, judicial system, the citizen system, the legislative system, and the crime system in recursive levels. For the purpose of this paper, the system-in-focus is the ministries of public security, i.e. the design process concentrated on the police officer of Mexico City. On the other hand, the Grounded Theory method was used to analyse data gathered by some Mexican NGOs, and to draw meaningful characteristics of an ideal police. This established the parametric model of the police officer situation. Then the paper proceeded to present the emergence of an ideal police concept through the emergence of GT concepts and the emergence of categories. In order to generate alternative police concepts, the parametric model shows the design capability, which is defined as the parametric and interactive parameters contradictions. Finally, it provides
direction on what to change and what to change to. Although the results of this study are not strictly conclusive, it has several implications for policy-makers and decision-takers. Using these results may help to develop a robust police concept, which would satisfy the Mexicans’ needs for effective police officers. Future research includes using these results to generate, evaluate and select the concept of an ideal police for Mexico City, with the collaboration of other disciplines such as psychology and social sciences.

REFERENCES


