

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter reviews the literature relevant to emergency dispatchers' attitudes towards the conceptual model of National Emergency Call Service in four main areas as follows:

- 2.1 Concept of Attitudes
- 2.2 Model of Communication
- 2.3 Nature of Emergency Call Service
- 2.4 Related Studies

2.1 CONCEPTS OF ATTITUDE

The term "attitude" has a number of meanings which are usually concern an opinion, a way of thinking, or feeling, etc.

Allport (1935) stated that attitude means mental state, accumulated from background knowledge and being ready to judge the value of something, or a situation in either a positive or negative direction.

Katz (1960) stated that attitude is a person's motivation to evaluate a person, a thing or a situation in terms of "like" or "dislike", "positive" or "negative" or "neutral".

To conclude, attitude refers to an individual's feeling toward someone, something or a situation which can be expressed in a positive, negative or neutral direction. Attitudes can change over time.

From the above definitions, attitude can be considered as a hypothetical construct to represent an individual's like or dislike for an item. Attitudes are positive, negative or neutral views to an "attitude object": i.e., a person, behavior or event. People can also be "ambivalent" towards a target, meaning that they simultaneously possess a positive and a negative bias towards the object in question.

Attitudes are composed of various forms of judgments, as in the ABC model (affect, behavioral change and cognition). An affective response is a physiological response that expresses an individual's preference for an entity. The behavioral

intention is a verbal indication of the intention of an individual. A cognitive response is a cognitive evaluation of the entity to form an attitude. Most attitudes in individuals are a result of observational learning from their environment. A link between attitude and behavior exists but depends on human behavior, some of which is irrational. For example, a person who is in favor of blood transfusion may not donate blood. This makes sense if the person does not like the sight of blood, which explains this irrationality.

2.1.1 Implicit and Explicit Attitudes

There is also considerable research on "implicit" attitudes, which are unconscious but have effects (identified through sophisticated methods using people's response times to stimuli). Implicit and "explicit" attitudes seem to affect people's behavior, though in different ways. They tend not to be strongly associated with each other, although in some cases they are. The relationship between them is poorly understood.

2.1.2 Factors That Affect Attitude Change

According to Hovland (1953), attitudes can be changed through persuasion. The celebrated work of Carl Hovland, at Yale University in the 1950s and 1960s, helped to advance knowledge of persuasion. In Hovland's view, we should understand attitude change as a response to communication. He and his colleagues did experimental research into the factors that can affect the persuasiveness of a message:

2.1.2.1. *Target Characteristics*: These are characteristics that refer to the person who receives and processes a message. One such trait is intelligence - it seems that more intelligent people are less easily persuaded by one-sided messages. Another variable that has been studied in this category is self-esteem. Although it is sometimes thought that those higher in self-esteem are less easily persuaded, there is some evidence that the relationship between self-esteem and persuasiveness is actually curvilinear, with people of moderate self-esteem being more easily persuaded than both those of high and low self-esteem levels. The mind frame and mood of the target also plays a role in this process.

2.1.2.2. *Source Characteristics*: Hovland and Weiss (1951) explained that the major source characteristics are expertise, trustworthiness and interpersonal attraction or attractiveness. The credibility of a perceived message has been found to be a key variable here, if one reads a report about health and believes it came from a professional medical journal, one may be more easily persuaded than if one believes it is from a popular newspaper. Some psychologists have debated whether this is a long-lasting effect while Hovland and Weiss (1951) found the effect of telling people that a message came from a credible source disappeared after several weeks (the so-called "sleeper effect"). Whether there is a sleeper effect is controversial. Received wisdom is that if people are informed of the source of a message before hearing it, there is less likelihood of a sleeper effect than if they are told a message and then told its source.

2.1.2.3. *Message Characteristics*: The nature of the message plays a role in persuasion. Sometimes presenting both sides of a story is useful to help change attitudes.

2.1.2.4. *Cognitive Routes*: A message can appeal to an individual's cognitive evaluation to help change an attitude. In the central route to persuasion the individual is presented with the data and motivated to evaluate the data and arrive at an attitude changing conclusion. In the peripheral route to attitude change, the individual is encouraged to not look at the content but at the source. This is commonly seen in modern advertisements that feature celebrities. In some cases, physician, doctors or experts are used. In other cases film stars are used for their attractiveness.

2.1.3 Source of Attitude

Attitudes originate from one of four sources. (Allport, 1935) First, from the learning process in a family, society, education system etc. Second, from life experience, which can leave the imprint of attitudes on individuals. Third, from imitating someone else. And lastly from the influence of a social group. If someone belongs to a group of people, the said person tends to follow the group's attitudes.

2.1.4 Attitude and Opinion Differences

McNemar (1947) defined the definition of attitude and opinion as follows:

2.1.4.1 Attitude is a readiness or tendency to act or react in a certain manner.

2.1.4.2 Opinion is defined as the verbal expression of an attitude.

McNemar stated that the terms attitude and opinion have been used, by some writers, as having a similar but not the same meaning. Both opinion and attitude can be interpreted as a way of thinking of people in particular actions that would likely happen in society. The opinion of one investigator might be called an attitude studied by another researcher, and vice versa. McNemar also makes a useful distinction between opinion and attitude through the basis technique; the typical attitude study involves a scale or a battery of questions for ascertaining attitudes whereas the typical opinion, (particularly public opinion) study leans heavily on a single question for a given issue.

Therefore, the differences between opinion and attitude can be varyingly interpreted. This paper intends to present only the attitudes of emergency dispatchers who had been working at 10 offices of the Police Communication Centers of the Metropolitan Police Bureau toward a conceptual model of National Emergency Call Service which does not currently exist in Thailand.

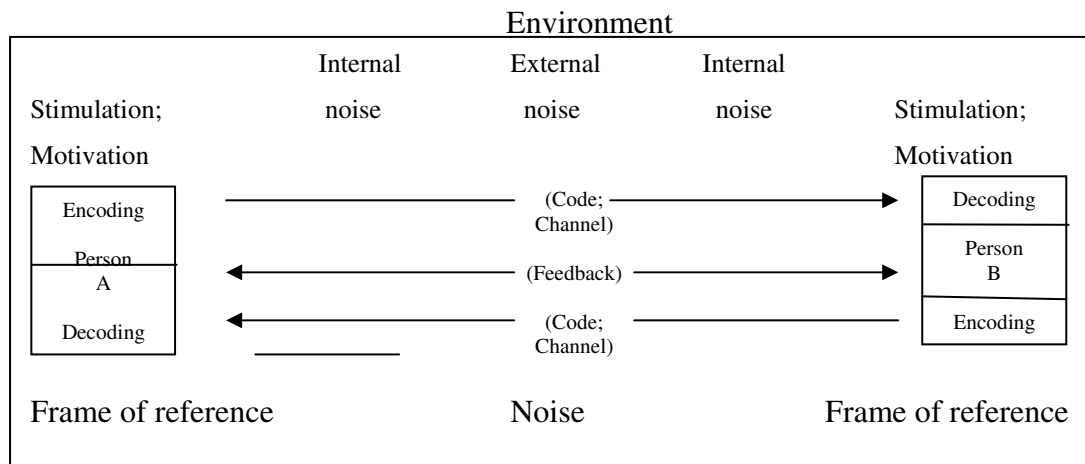
2.2 MODEL OF COMMUNICATION

Communication plays an important role in human life, occurring by sending and receiving messages among people all the time, everywhere; at home, at the market, office or in vehicles etc. Communication skills have become more important as a key to success for persons and organizations in a complex society.

Hamilton and Parker (1997) stated that communication is the process of people sharing thoughts, ideas and feelings with each other in commonly understandable ways.

According to Hamilton and Parker's definition, when people communicate, they express their ideas and feelings in a way that is understandable (common) to each of them. They attempt to share information with each other. As a process, the following figure is a basic communication model which includes factors that can affect the efficiency of communication.

Figure 2. A basic model of communication



From figure 2, a process of communication is composed of many elements in sending and receiving the message which occur simultaneously. The main factors of the communication process are as follows:

2.2.1 Person A/Person B

Person A in the mode could be the sender (the source of the message) or the receiver (the interpreter of the message). Person B also could be either the sender or the receiver. Actually, during most of their communication, they will both send and receive simultaneously.

2.2.2 Stimulus and Motivation

Two things must happen before the sender even wants to send a message. First, the sender must be stimulated. Some type of stimulus triggers a thought, which in turn triggers the desire to communicate. A stimulus can be either internal or external.

It is important to remember, however, that a stimulus alone is not enough to trigger communication. The second requirement to send a message is sufficient motivation.

2.2.3 Encoding and Decoding

After being stimulated and motivated to communicate, the sender must decide how best to convey a message to the specific receiver. The process of putting a message into the form in which it is to be communicated is called *encoding*. For

example, when a manager finds it necessary to reprimand an employee, encoding and decoding become very important.

When the encoder's message is picked up, the receiver tries to make sense out of it, that is, to decode it. *Decoding* is the process the receiver goes through in trying to interpret the exact meaning of a message.

The code is not the message but the symbols that carries the message. There are three basic communication codes:

(1) *Language* (verbal code). Either spoken or written words used to communicate thoughts and emotions.

(2) *Paralanguage* (vocal code). The vocal elements that go along with spoken language, including tone of voice, pitch, rate, volume and emphasis.

(3) *Nonverbal* (visual code). All intentional and unintentional means other than writing or speaking by which a person sends a message, including facial expressions, eye contact, gestures, appearance, posture, size and location of office and arrival time at meetings.

2.2.4 Channel

In many circumstances, the success of sending message may depend on the channel selected. A channel is the medium selected to carry the message. Some examples of communication channels are face-to-face discussion, memos, magazines, newsletters, radio, telephone, and television.

2.2.5 Feedback

When people observe their own behavior and resolve to do better next time, when people ask friends to give an opinion on how well they handled a certain situation, or when managers suggest ways in which employees can improve their performance, feedback is being employed. Feedback refers to the verbal and visual responses to messages.

2.2.6 Environment

The effective communicator plans and controls the environment as much as possible. The environment includes the "time, place, physical and social

surroundings” in which the communicators find themselves. For example, the mood of a meeting, and consequently the success of its communication, depends on the time at which the meeting is scheduled 8:00 a.m., 2:00 p.m., or 30 minutes before quitting time.

2.2.7 Frame of Reference

Hamilton and Parker (1997) stated that although both person A and person B try their best to encode and decode the message during their communication, the communication may breakdown in some ways. In the communication process, the sender and receiver use their own backgrounds and experiences—their frame of reference—in encoding and decoding process. When the frame of the reference of the sender and receiver are identical, the communication will work best. If not, there still have misunderstanding. Frames of reference include educational background, race, sex, where the person grew up, what his or her parents were like, attitudes, personality, all past experiences, and much more.

2.3 NATURE OF EMERGENCY CALL SERVICE

2.3.1 History of the Single Number for Emergency Calls

The first emergency number system to be deployed was in London on June 30, 1937 when 999 was dialed, a buzzer sounded and a red light flashed in the exchange to attract an operator’s attention. It was gradually extended to cover the entire country, but it was not until the late 1970s that the facility was available from every telephone (http://en.wikipedia.org/wiki/emergency_telephone_number).

The first North American emergency number was the 999 system deployed in Winnipeg, Manitoba, Canada in 1959 at the urging of Stephen Juba, the mayor of Winnipeg at the time. The first US 911 emergency phone system was set up in Alabama in 1968, but it was not in use everywhere until the 1980s. To standardize the number across most of the NANP, Canada switched to using 911 as its emergency number in 1972 (Southern Illinois University, 2006).

2.3.2 Concept of Emergency Call Service

Emergency call service is a public service for people who are in a life-threatening crisis and need urgent assistance. The office of Community Oriented Policing Services US Department of Justice (Century Solutions Inc., 2003) revealed that emergency call service in many countries is “C3I” (Command Control Combine Communication and Information) which is compiled in a telecommunication and database system. C3I is composed of a dispatching and supporting system as follows:

2.3.2.1 Dispatching System

It is the main part of Command Control and Communication which needs advanced technology of telecommunications to communicate accurately and rapidly. It is composed of four systems as follows:

(1) *Incident Reporting and Recording system (IRRS)*: This system links all kinds of telecommunication networks to the Automatic Number Identification (ANI) and Automatic Location Identification (ALI) system to identify the number and location on a digital map in the dispatching Center. Some countries provide the required personal information of the caller for analyzing the incident accurately and dispatching the message to relevant offices and responders rapidly.

(2) *Automatic Vehicle Location System (AVLS)*: All emergency responder’s vehicles are installed with GPS (Global Position System) to show where they are in a digital map to assign the closest responders.

(3) *Dispatching System (DS)* Emergency responder’s vehicles are installed with this system to receive the assigned shot message from the dispatcher in writing and report how they have responded to the incident.

2.3.2.2 Database System

In this system, all dispatchers and responders can access the database system to support officers in any operation. For example, criminal records, stolen cars, community information, personnel database, etc.

2.3.3 The 191 Emergency Call Service

According to a report of the Metropolitan Police Bureau in “Project of Improving Dispatch Operation Center” (กองบัญชาการตำรวจนครบาล, 2542) states that 191 is the original single number of emergency call service in Thailand that provides police service dealing with crimes and all police functions (both emergency and non-emergency matters) covering the Bangkok area. Dispatchers in the 191 Center have been repeatedly asked to relay messages to other services such as electricity breakdown, water leaks, and lodging complaints against officers or medical service.

Even though the 191 Center has been gradually developed to stay abreast of modern technology, its responsibilities remain unclear and are not efficient enough. That is because:

(1) Three main emergency call services (police, fire and medical service) have different numbers with different offices. People cannot remember the required number when in a critical situation.

(2) There are too many hotline numbers in Thailand (3-4 digit numbers) including call centers of businesses and other government agencies.

(3) The communication networks do not have the same standard of service

(4) The database system in government agencies has no connection to public services.

(5) The 191 Center has too many responsibilities, including emergencies, non-emergencies and other routine services. Not only does this waste dispatchers' time in managing a call, it prevents real emergency line access to dispatchers.

2.4 RELATED STUDIES

According to Ake Tangsubwattana and Sorawit Naruepiti (เอก ตั้งทรัพย์วัฒนาและสรวิศ นฤปิติ, 2549) in the study of “the Service of Emergency Call Connecting with

Networks Nationwide: Compared to Foreign Countries”, reported to the Royal Thai Police, concluded that there are at least five types of emergency call services as follows:

(1) **Centralized system:** The simplest way that uses basic technologies in telecommunication, allowing people to reach the service by a single number, also known as a universal number, and dispatching the message by walkie-talkie with a manual record of incidents. This system can be developed to be professional by training and managing but it can cause inefficiency in taking phone and dispatching messages for a number of reasons. It still exists in some provinces in Thailand.

(2) **Decentralized system:** Emergency services will be assigned to many centers. It can work better but is profession enough. In contrast, it confuses travelers and some local people in terms of where they are and what number they need.

(3) **Technologically-equipped-centralized system:** Using advanced technologies to enhance the performance of emergency service.

(4) **Outsource system:** Using the same principle as a technologically-equipped-centralized system, operated by a private company.

(5) **Dual number:** Using 2 numbers independently for real emergencies and non-emergencies. For example, 911 and 311 in USA.

Also, Ake Tangsubwattana and Sorawit Naruepiti (เอก ตั้งทรัพย์วัฒนา และ สรวิศ นฤปิติ, 2549) proposed three ways to improve the standard of police emergency service in Thailand:

Stage 1

- a. Setting standard operating procedures for emergency dispatchers nationwide
- b. Having telephone technologies which direct the line that dialed 191 to the emergency service center that is responsible for that area directly.

Stage 2

- a. Setting advanced technologies in Automatic Number Identification (ANI) and Automatic Location Identification (ALI).
- b. Re-structuring the organization by separating Emergency Call Service from routine police work to create a checks and balances system and professionalism.

Stage 3

Dividing the task into two groups; first, real emergencies such as life-threatening situations, crimes in progress etc. and others for reporting non-emergencies in which the dispatch procedures must be different.