

Terrorism and the network

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Abstract. Terrorists have become a part of the problems of social life in many parts of the world. However, to solve the problem, it is not enough to cripple the attack, but understand the spread the understanding. It needs social engineering to break terrorist understanding in the world, through modeling the social networks. The model presents the application of graph theory, besides to do forensic to the origin of terrorist-related information.

1. Introduction

Not only does it affect the physical world, the damage, the impact of terrorist behavior also changes some of the behavior of some of the world communities to some others [1, 2]. Terror behavior has long been formed as terrorism exists and appears in terms and understanding. Thus, terror is not only an action, but a method (a way), reaction, and principle, even an ideology. For this reason, the word terrorism represents a human understanding of their life globally [3].

Acts of terror are not only related to one perpetrator, but in groups and even organized. It illustrates the existence of community, which in theory it becomes a social network [4]. It is a form of social structure that provides an overview of how the community was formed, the influence of social actors on the other social actors, or the spread of terrorism. Thus, this paper aims to design a form of understanding to terrorism based on social networks.

2. A Review: From Definitions to the Network

In an online dictionary,[‡] the term terrorism is stated as the systematic use of terror, especially as a means of coercion. Whereas in other dictionary,[§] terrorism is violence or the threat of violence directed against civilians for the purpose of creating intense fear, which the terrorist hopes to exploit to attain political or ideological goals. Terrorism, therefore, has different definitions [5, 6]. For example, "*terrorism is the deliberate killing of innocent people, at random, in order to spread fear through a whole population and force the hand of its political leaders*" [7]. Generally, a definition follows an interest, as the definition by the FBI states that terrorism is an act of "*the use of serious violence against persons or property, or threat to use such violence, to*

[‡] <https://www.merriam-webster.com/dictionary/terrorism>

[§] <https://www.vocabulary.com/dictionary/terrorism>

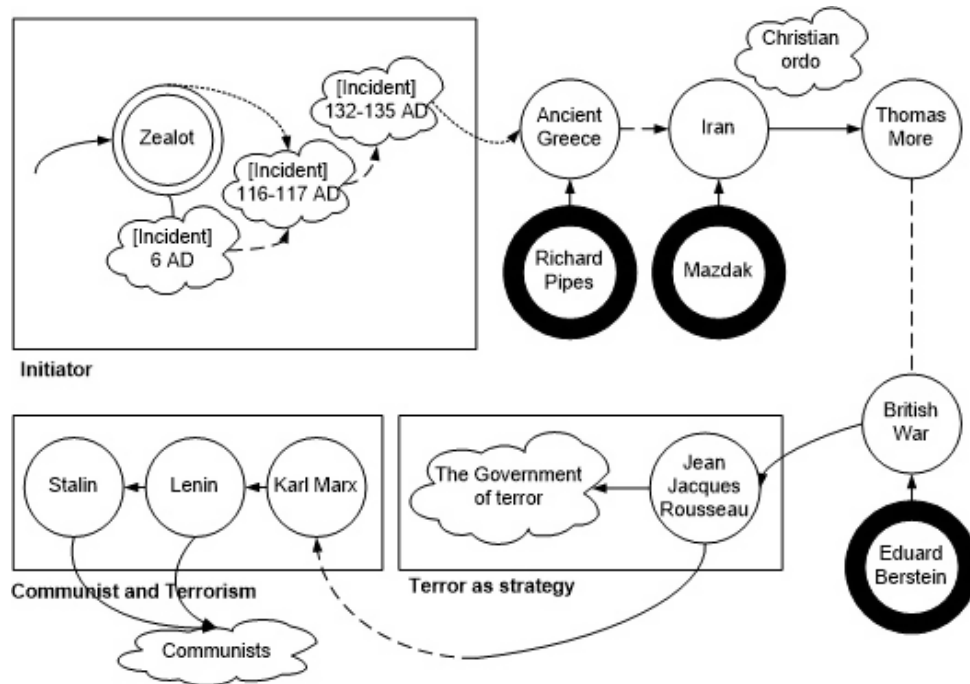


Figure 1. A network about terrorism: initiators, actors, ideas, conceptors, areas, and incidents

intimidate or coerce a government, the public or any section of the public, in order to promote political, social or ideological objectives" [8, 9].

Literally, the search for terrorist behavior has emerged since 6 AD when the Jews opposed Roman rule. A Jew, named Zealot, organized and implemented terrorist activities to drive out the Romans [10, 11]. The implication of terrorism emerged again in 116-117 AD, and repeated 132-135 AD until the Jewish community was driven out of their homes. Thus, the term terrorism not only originated from that behavior and actions, but the term became political vocabulary when Edmund Burke voiced his criticism of the government after the French Revolution of 1792-1794. "The government of terror," he said, for the French government which used systematic terror to intimidate and eliminate its enemies [12].

The terror has claimed many victims since that idea became a strategy to undermine a government, social environments, and inflict physical damage in various places on the surface of the earth. The terror developed into a principle, it as terrorism, when communists applied the terror to rule the world: Karl Marx said *"When have no compassion and we ask no compassion from you. When our turn comes, we shall not make excuses for the terror."* Other words, when the time comes, the communist will look for reasons to carry out terror [13];|| Lenin said that it doesn't matter if three quarters of the world's population runs out, as long as a quarter of the population is communist. To carry out communism, we are not afraid to walk on the bodies of 30 million people [14];¶ Then, Stalin said *"The death of one person is a tragedy. The*

|| <https://www.marxists.org/archive/marx/works/1849/05/19c.htm>

¶ <https://republika.co.id/berita/koran/news-update/15/10/08/nvw0o7-tujuh-dusta-raksasa->

death of a million people is a statistic" [15].

This principle stems from the influence of several social thinkers, based on their network of influence extending to communist figures, such as Figure 1. Of course, the networks grow and develop insofar as the influence of terrorism becomes part of the government's intrigue to power and in social societies that are insensitive to the spread of slander in various social groups. This requires study. As Richard Pipes has explained, the idea of classless social formation originated in ancient Greece. After that, in fifth century, Mazdak movement was present in Iran with the same theme [16], and then it was present in some communities with the Christian religious ordo [17]. This idea of common property rights in property, become the concept of communism, has been written in the work of Thomas More (English writer). Next, Eduard Bernstein argued that during the British war, one of them is the party supported communism [18]. The same idea too became the thought concept of Jean Jacques Rousseau in France and communism emerged as a political doctrine as a result of acts of terror [19].

3. The network as the approaches

Behind the successful extraction of social networks from the information space which can be in the form of email, internet, web or other sources [20, 21, 22, 23, 24, 25, 26, 27, 28], there is a major burden to ensure that the information produced is trusted [29, 30, 31, 32, 33]. However, in social networks, the track record of social actors and initiators who are sources of information has an influence on the existence of such networks [34]. As far as the important of information confidence is concerned, the source of information and its origin determines whether a social network is good or not [35]. Likewise, terrorist networks require searching for sources of information, from initiators and drafter to terrorist actors [36]. It is based on the assumption that terror is the cause and effect of ideas embedded in the work of various social thinkers [37, 38]. Therefore the study of terrorist networks also involves the initiators of related ideas. It approach certainly involves a variety of measurements both based on similarity and reliability of the network [39, 40].

The importance of various levels of measurement results cause the need for the design of a form of understanding about terrorism and its networks [42]. However, the flow of information and its influence need to reveal the role of every social actor in a social network as a network of terror. The aim is to tackle terror activities from the start including reducing the influence of related thought. It is based on the assumption that terror itself is closely related to the concepts and thoughts come from communism, although it requires a deeper study [41]. When each part of a terrorist network generation goes through a generating network where the edges e_j represent the entities of the supporting parts, while the nodes v_i represent the flow of use of the parts so that the terrorist network takes shape. This results in an equation about measuring the reliability of the network by arrangement of edges sequence [40], i.e.,

$$Re = \sum_{i=1}^I \prod_{j=1}^I e_j \quad (1)$$

where the arrangement e_j depends on a size from the origin node and the destination node v_I , whereas every e_j in this case is a probability.

4. A discussion about the terroris network

Social networks describe the social structure and meaning [43, 44]. The meaning based on the flow of information both published in hard copy and online [45]. A terrorist social network or in the terrorist network is a model that involves graph theory, $G(V, E)$, for classifying/clustering data into relevant information. The terrorist network rely on actors, both actors and initiators [46, 47]. In a graph [48, 49, 50], node $v \in V$ represents an actor, that is

$$\gamma_1(1 : 1) : A \rightarrow V \quad (2)$$

where $A = \{a_i | i = 1, \dots, n\}$ is a set of social actors, and edge $e \in E$ is a relationship, i.e.,

$$\gamma_2 : R \rightarrow E \quad (3)$$

or $e_j = \gamma_2(r_k(a_i, a_l))$ for $R = \{r_k | k = 1, \dots, p\}$ as a set of relations, $a_i, a_l \in A$, while the actor labels or the relation labels aim to emphasize the function roles of the actor.

$$\gamma_3 : \Omega \rightarrow \mathcal{L}, \quad (4)$$

where Ω is an information source, and \mathcal{L} is a set of labels. The labels come from information sources [51, 52].

The node label provides the role of the actor, the label is not one, or there are many labels that might be part of the network [53, 54]. Likewise, the relation label determines the influence that flows in that community, and this directly comes from the concept of the relation itself [55]. In addition to labels, network structure provides an integrated description of the role of actors. The command role of an actor, for example, gives a certain character to the graph image. The central role of an actor, in another case, will be depicted as a tree in the graph. However, the weight $w \in \mathcal{R}$ (real numbers) determines the role to what extent applicable, where a set of weights is \mathcal{W} such that $w \in \mathcal{W}$. Sometimes the relation between two actors is silent, but the relation with other related actors who are strongly adrift with both have the opposite relation, not quiet, or so strong [55, 56]. Thus, disclosing the role of actors in the network requires a valid analysis of social networks. Besides, the determination of the roles to something requires forensic of information sources. Strictly speaking, in order to generate a certain level of trust, it is necessary to do forensics that of the network. However, the source of information contains its own problems in the level of trust. There is an assumption that states that "garbage in garbage out" (GIGO) [57]. Thus, people and facilities that present information in the information space need special handling, including imposing sanctions as an un-truly source, if it is stating information that is false (hoax) [58, 59]. For example, through observations so far the problems related to the issue of IDR '16 M' have no solution (not unproven), either from the person who state first in the newspaper (the actor name: Osmar Tanjung) or from the newspaper itself, so it is possible that the issue is about giving false information or leads to slander (the newspaper: "Harian Andalas") [60, 61].

Back to the issue of terrorism. Next, discussing the 9/11 attacks, for example, as a basis for the interests of the study of terrorist network [62], $TN(A \cap \mathcal{L} \cap \mathcal{W}, E \cap \mathcal{L} \cap \mathcal{W})$. Apart from the actors whose involvement so far has not been proven, or the country that might support the activity. Certainty about the impact is that there is a lot of prolonged damage both physically and international relations between the countries involved in the war as a result of terrorism. For example, there is an attitude that is not manly (gentlemen), when a group of countries gangs up on a small country

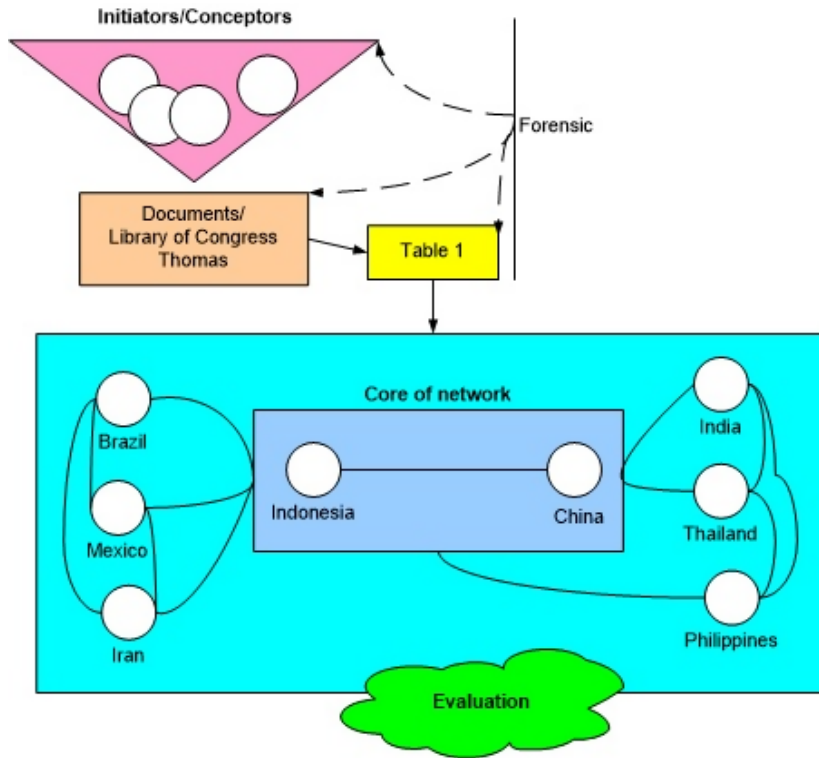


Figure 2. Design for understanding a network

Table 1. The communities of countries based two topics

	Nuclear Arms Race	Human Rights
Description	nuclear, arms, prevention, race, space	rights, human, palestine, occupide, israel
Community	China, Brazil, Mexico, Indonesia, Iran	China, India, Indonesia, Thailand, Philippines

which is not without evidence of having sophisticated weapons involving sophisticated weapons. In some researches, this issue is a main agenda. A group of researchers, for example, revealed information about nuclear arms race and human rights based on Library of Congress Thomas database, which produced information such as Tabel 1, and it produces similarity between two countries: Indonesia and China [67], see Figure 2. Information about this network requires forensics to test the extent to which the trusty of information revealed is true and involves the technique being true. Based on the assumption that there is a possibility of the information that the researcher presents in his paper as information untruth, even though it involves the technique being true. When the source of information is doubtful, the results are also doubtful. There is a possibility that what happened was that those who communicated via email accidentally pushed the 9/11 attacks [64, 65, 66, 67], and of course another allegation was that it was only a scenario so that the activity will avoid from the pursuit by human rights [68]. It requires the study. Therefore, this paper propose for conducting

forensic studies about both theories and related sources of information of something that is essential. This is the initial draft on an understanding of terror or terrorism.

Generating social networks from information sources requires appropriate techniques, and this depends on the information source. Terrorist networks is a form of expression of the terrorism activities. For that reason, the study of networks related to terrorism requires caution, namely by involving the integration of all information. Thus, information as a material for decision making requires better extraction [69]. Some considerations are as steps as follows:

- (i) Recognize information sources with interrelated searches as is the case with references and a scientific paper.
- (ii) Recognize the person who is stating or starting point of information distribution.
- (iii) Prove that the process is correct through theory and comparison of implementations results.
- (iv) Reassess information as a trusted outcome based on the correct process and from a trusted origin.
- (v) Providing comments about whether the source of information is appropriate or not based on scientific principles.

The steps above are the procedures for conducting terrorist networks forensics from the results of the study. The network only provides potluck based on information sources. Interpretation of the network provides facts not far from the level of trust in the source of information and the ability of the method to process it. Thus, information not only needs to be trusted but has reliability by measuring the capacity of the people from whom information originates. For example, by measuring the opportunity each person has an interest for opposite the information he/she provides into the information space. The reliability of the method also becomes the foundation to support the forensic results of the network. After all it, the task of this forensic is to reveal the reliability of the information source and the method together is also reveal the network reliability likes Eq. (1).

5. Conclusion

Terrorism comes from initiatives and ideas that psychologically conflict with natural principles. The irrationality of terror can be seen from the community of initiators and perpetrators who may be portrayed in the network. Proposing a draft for understanding is part of the study of terrorism and its networks. In this case, involving forensic information sources, the origin of information, and evaluation of the results of the process. A study has produced a preliminary draft of that purpose.

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