Homegrown Terrorism in Game Theory

Introduction

With the rise in concern revolving around homegrown terrorism, it is no question as to why it has become such a hot topic in the field of international relations. Scholars have been fascinated with the topic and have attempted to solve the issue and predict terrorist attacks since early on in our nation's history. The immense patriotism in America is what I attribute to cause the initial shock of homegrown terrorism. The United States has this sense of expectancy that other nations will inevitably experience the act of treason within their home yet their nation has some sort of immutability to such causing such a shock and difficulty in understanding when events of homegrown terrorism do occur in the States. As someone who is receiving a psychology degree and has prior experience in research in psychological studies, I feel inclined to attribute the act of homegrown terrorism in America to a certain state of mind and underlying motives that can lead to different courses of actions. Because of the relationship psychology will have with the engagement of terrorism I will be pulling from two schools of thought: the psychological school of thought as well as the school of international relations specifically counter and understanding terrorism. The analysis I have conducted attempts to establish a model or pattern involved in engaging in a life of terrorism. In this model, I will be utilizing game theory and specifically focusing on determining certain payoffs influenced by psychological factors. Once a certain model is determined, I will test it using certain cases of homegrown terrorists in the United States of America. The question that will guide my research is: "*How does a basic model of interaction between a recruiter and target change based on the psychological factors involved in determining actions?*

Literature Review

In order to tie in game theory with the psychological factors that are involved in homegrown terror, I needed to incorporate two schools of thought; that of international relations and psychology. By combining these two, I was able to identify a basic model in which could be adjusted to adhere to three of the most popular situations involving recruitment of an individual conducted by a terrorist organization. In order to properly address the topic of homegrown terrorism I first needed to define the term in which I researched several scholars definitions such as the FBI, Beutel, Brooks, Grist & Mahan, as well as the Center for Strategic and International Studies. Each of my sources definitions had similar concepts in the theory of revolting against one's home country for some sort of political, religious, or personal agenda. As far as addressing motives of strategic interactions, Stout, explains how frustration is often a factor while other scholars such as, Olsson, Krueger, Beutel, Grist & Mahan suggest that religious awakening can also be a leading factor (Alexander, Carlton, & Wilkinson 1979; Stout 2002; Olsson 2014; Krueger 2008; Beutel 2007; Grist & Mahan 2003). The last thing that I saw of importance to my topic was the actual recruitment itself and how a recruiter can manipulate of give this target the sense of belonging or worthiness he wants which a driving factor found in the Frustration and Religious Awakening Models (Alexander, Carlton, & Wilkinson 1979; Ozeren 2007).

Contribution to the Topic

In the school of international relations, there is a lot of unclarity on the issue of homegrown terror and how one would engage in such an activity. On the other hand, in the school of psychology, there seems to be a set thought process homegrown terrorists follow in relation to their upbringings, I will come up with three different models in which the initial target's personality and upbringing will change affecting the equilibrium and probability of Nature's course of action. In addition to this, several scholars have attempted to construct a list of what the process of becoming a homegrown terrorist would look like. I am going to utilize these steps to identify a pattern with three distinct lifestyles and psychological factors that can lead up to radicalization.

The Issue of Terror from Within

In the age of terror, the United States is facing daily threats from within its own borders. The issue of terrorism has slowly shifted from the concern of overseas terrorist activity, to a concern about our own citizens. These homegrown terrorists, for whatever reason have radicalized and taken up arms against the very nation in which they were born, committing a severe form of treason. In my research, I will address the issues in which we have previously attempted to predict terrorist actions and the importance of initially understanding the differing psychological factors that lead to a certain course of action. I will analyze the steps and psychological factors that play a role in determining utility as well as payoffs for each actor involved. I will also expose the various reasons as to why some actors in the three models would engage in such violent activities as well as how certain terrorist organizations trigger a phycological attraction within U.S. citizens to play a role in their agenda. In relation to examining how these organizations draw in Americans, I will briefly touch on the psychological affects derived from social media tactics as well as other forms of propaganda made accessible to the public through the Internet. I have constructed the following research question to guide my research: *How does a basic model of interaction between a recruiter and target change based on the psychological factors involved in determining actions?* For the purpose of my research, I will first define homegrown terrorism, which will then lead to the scholarly conversation of what the world of international relations and psychology is saying about the topic in relation to the motives behind homegrown terrorism, the recruitment process and what psychological factors are involved in becoming a homegrown terrorist. By first defining homegrown terrorism, I will address the various definitions developed by certain leading organizations while revealing the common terms essential to defining homegrown terrorism.

What is Homegrown Terrorism?

As the United States reaches its six year mark into the age of terror, the argument of establishing a set definition of terrorism still exists. Different organizations seem to have formed different definitions of homegrown terror. FBI director, Robert Mueller suggests that homegrown terrorists are "self recruited, self trained and self executing...shared ideas and information online" while the actual FBI website defines homegrown terrorism as "the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political of social objectives," (Beutel 2007; Grist & Mahan 2003) while the CSIS (Center for Strategic and International Studies) expresses that homegrown terrorism is linked to a religious agenda by defining homegrown terrorism as, "extremist violence perpetrated by U.S. citizens or legal U.S. residents, and linked to or inspired by al Qaeda's brand of radical Sunni Islamism" (Brooks 2011). From this definition, one can see the attribution of terrorism to fulfill a religious agenda. Most scholars frown upon this connection from religion to terrorism since the idea of inflicting fear upon a group may have other motives than just religious radicalism. In response to this, international relations scholar Jenkins takes a more political approach by defining terrorism as "use or threatened use of force to achieve political ends," whereas, his colleague Laquer takes this definition and adds the "targeting of innocent people" (Grist & Mahan 2003). For the purpose of my research I have chosen to define homegrown terrorism as: *a form of treason executed by a citizen of the threatened country in which he/she utilizes violent measures or intelligence in order to inflict fear upon a group to achieve a certain motive in his/her home or host country.*

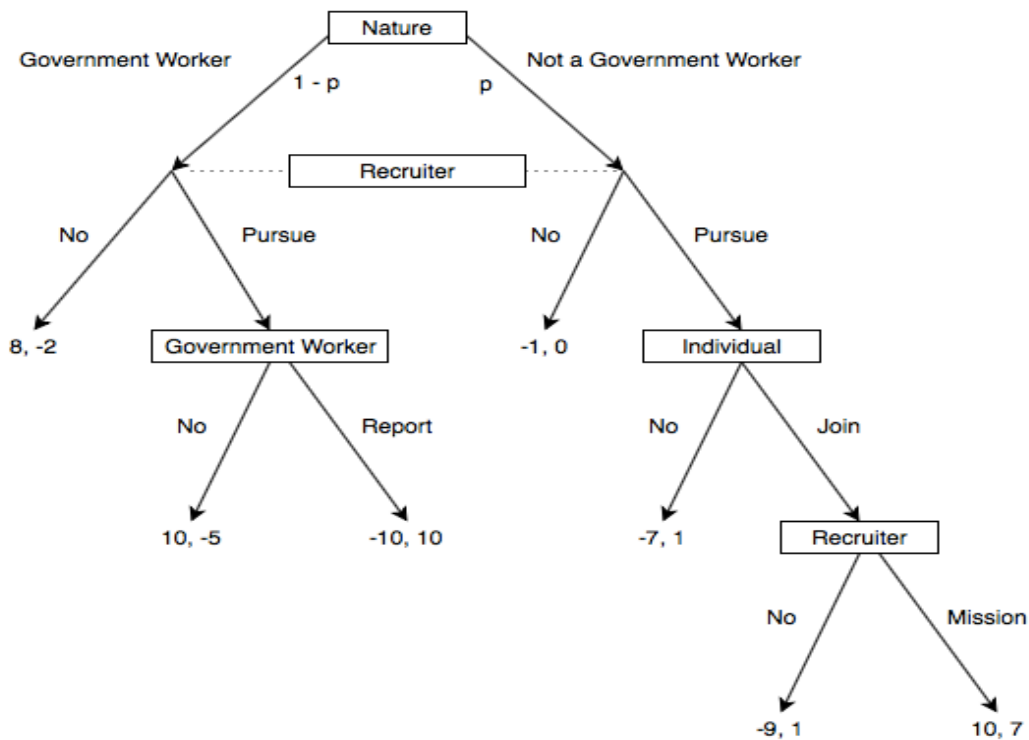**What draws in an American to Terrorism: Motives**

It is no question that there has been a noticeable small selection of citizens of the United States rejecting their citizenship and taking up arms against their homeland, yet the question of why they are engaging in such activity still remains. In a nation so engulfed by patriotism, how could this be happening? Brooks (2011) explains that after the killing of Osama Bin Laden, the threat of homegrown terrorism would become more prevalent, in fact, he goes on to make a claim that public officials studying this issue have confirmed that, "the number of American engaging in terrorist activity has

risen" (Brooks 2011). Wether or not this can be contributed to the level of security and the ability to identify threats has become more advanced is a seemingly unanswerable question. The fact remains that documented terrorist activity has increased in the post 9/11 world. Since this theory has been proven true, the question as to how could citizens resort to a life of terror remains. The answer lies in their underlying motives; the main two addressed in this conversation of homegrown terrorism within the school of international relations are frustration and religious extremism.

The three motives I will focus on deal with three different personas. The first is the government actor model, in which the recruiter mistakes an undercover government worker as a potential recruitee. This model ends terribly for the terrorist organization that is recruiting due to exposure. The next model in which I will focus on is a frustration model. This model essentially feeds off the frustration and anger with an individual. This model can encompass a vast majority of personalities and situations in which have left individuals with a feeling of frustration. Stout addresses that the violence occurring is not senseless but rather it has resulted as a fruit of resentment and frustration (Stout 2002). The last model I have constructed is the Religious seeking model. In *The Psychology of Terrorism*, another motive scholars such as, Olsson, Krueger, Beutel, Grist & Mahan attribute to a motive of homegrown terrorism is religious awakening (Olsson 2014; Krueger 2008; Beutel 2007; Grist & Mahan 2003). The attraction of spiritualism is enough to entice many. However, Brooks argues that religious extremism is not as prominent of a motive as the school of international relations thinks it is (Brooks 2011). Identifying a terrorists motives can be spotted through careful analysis as well as face to face interaction, however, because most do not regularly interact with such individuals, it is important to understand that the motives are endless and I have just addressed a few in which I will be basing my models off of and will continue to go into depth when my complete model is explained in detail.

Recruitment

The process of becoming a homegrown terrorist starts with recruitment. With the expansion and globalization the Internet has brought, it has provided terrorists with a critical tool for communication (Alexander, Carlton, & Wilkinson 1979). This phenomenal mass means of communication device has caused a worldwide attraction to blogs, chat rooms, and informational websites (Ozeren 2007) Both Alexander and Ozeren express the importance of chat rooms. The organizations utilize the chat rooms to provide a nurturing environment for those who happen to stumble upon (Alexander, Carlton, & Wilkinson 1979; Ozeren 2007). This nurturing environment becomes a safe space drawing those who mentally seek such. The recruiters behind the screen, create a sense of community attracting those who long for a place to fit in. The desire for acceptance is often due to past psychological experiences of being left out or the fear of never finding a place of belonging. The recruitment process of terrorism has drastically changed to target and appeal to a younger generation (Ozeren 2007). In attempting to gain younger terrorists, organizations are engaging in social media and as seen with ISIS, have never experienced more success. Once a recruiter targets an audience, it becomes easy to manipulate the situation to appeal to the target of choice. Once a target is chosen, a general method will be used to attract the intended audience. After the recruiter begins to pursue it is up to the recruit to determine whether or not he or she would like to be a part of the organization. The decision made by the recruit is heavily reliant upon psychological factors and background. Once a decision has been made the recruiter then has the choice of whether or not to grant this individual with a mission or to not which in turn could cause the recruit to be upset and turn against the recruiter. Ultimately the recruiter can not be completely certain of who he is dealing with but he can make the best guess given his set of information and research conducted on his target by his organization. Terrorist groups often know who to attract and how to attract them however, their plans are not always full proof and with the rise of U.S. intel has become threatened of exposure. The uncertainty can often cause hesitation, which is where game theory models come into play in determining situational possibilities, outcomes, and probability.
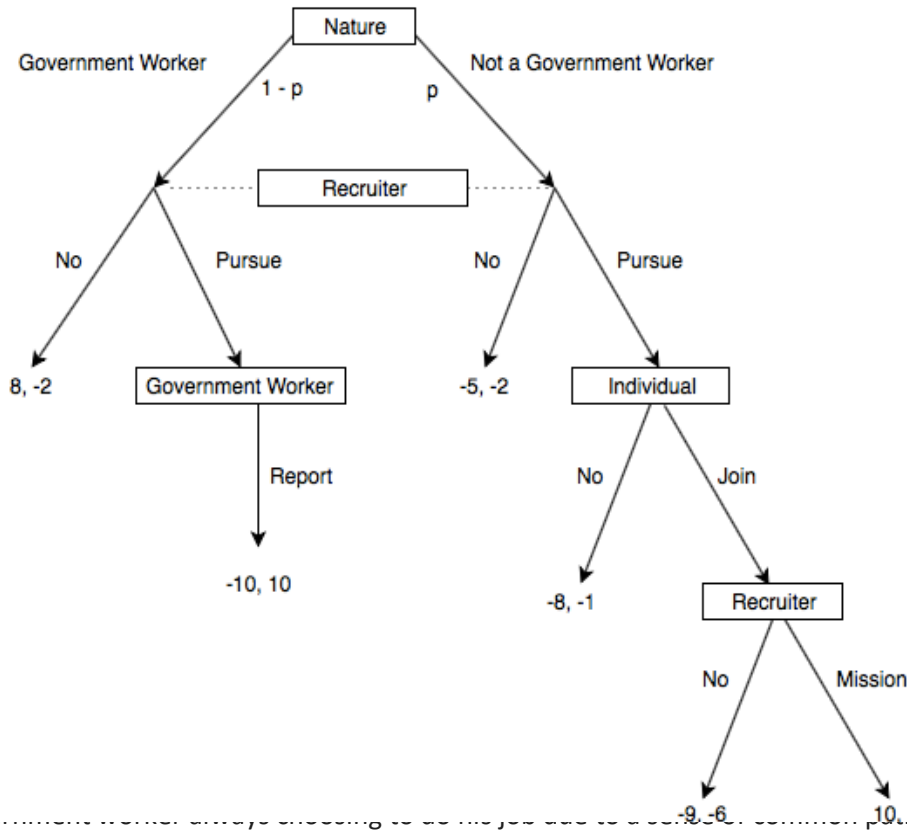
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                              Nature
        Government Worker              Not a Government Worker
              1 - p                            p
                              Recruiter
     No          Pursue              No            Pursue
    8, -2    Government Worker      -1, 0         Individual
        No            Report             No          Join
      10, -5         -10, 10          -7, 1        Recruiter
                                              No         Mission
                                             -9, 1        10, 7
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imperfect information. Because of the uncertainty determined by nature, each actor has more at risk. The game includes two actors; the recruiter and the recruit. The recruiter goes into the game unaware as to if he is dealing with a government worker or someone who is truly interested in joining the organization. The recruiter chooses whether or not to pursue the recruit and depending on if the recruit is a government worker or not the pay offs will vary. If the recruit chooses to mistakenly pursue a government official, the government worker will automatically report and investigate causing a payoff of (-10, 10) in which he completely exposes himself to the enemy and could eventually shut down recruitment if possible. If the recruiter unknowingly does not pursue a government, the actors receive a payoff structure of (8,-2). If the recruiter chooses to recruit someone actually interested in involvement in the organization, then the individual would have to decide whether or not he will join and then it is left up to the recruiter to decide whether or not he will give the individual information to perform a mission causing the best possible outcome for the recruiter. If the recruiter pursues a non-loyal citizen and the citizen does not choose to join, the recruiter again has put himself and his organization in a vulnerable spot bringing the pay off to (-7, 1). If the individual does choose to join and then the recruiter backs out in fear that the individual is a government worker, the pay off becomes (-9, 1) because of the exposure of his organization and the possibility that the individual could report however it is very unlikely for the game to reach this stage. Choosing to pursue would be in equilibrium if & only if (iff) $p \geq 18/29$, however, the recruiter should be hesitant with his interaction and should do further research on his target before committing. One mistake can lead to unnecessary exposure. The SPNE is as follows if and only if $p \geq 18/29$:

SPNE	OUTCOME	PAYOFF
R: P	P-J-M or P-N	(10,7) or (-9,1)
I: J, N		
G: R		

Government Actor Model

The mode... recruiter mistakenly... with nature determini... this game of uncertaint... recruiter continues... him resulting i... y other option the... r payoff of (8, -2). The... e governme... reaching out to a prosp... e not only is he doing h... hrough the possible in... e organizati... e mainly from the g... otism or a hard working attitude. Because of the drastic outcome that would result from pursuing a government worker, the equilibrium of this situation is for the recruiter to pursue if and only if p ≤ 18/29. The SPNE when p ≤ 18/29 is written as follows:

| SPNE	OUTCOME	PAYOFF
R: P	N	(8, -2)
G: R	R	

The Frustration Model
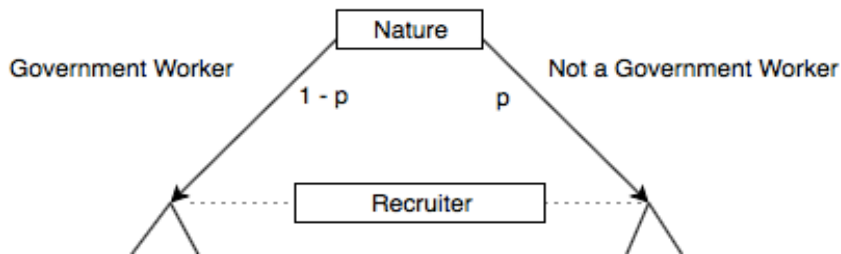
This model pulls from a place of anger and violence implemented by frustration. This tactic is something that tends to appeal to the masses and is particularly seen in Donald Trump's recent presidential campaign. This methodology causes a subject to dwell in his frustration to the point that leads to some form of rash action. The strategic interaction involved in this game is a frustrated U.S. citizen and a recruit. The frustrated citizen can be angry for a variety of reasons. Frustration in this situation is a driving force impairing decision-making. Frustration can be rooted in a variety of issues such as lack of a parental figure (particularly father figures) or any form of rejection from early on childhood to current age (Olsson 2014). In addition, another factor that can lead to frustration is disappointment of the individual's host country. The frustration in this case leads to a rebellion against his own country, which was seen in John Brown's life during the Civil War (Brooks 2011).

The probability of nature choosing a nongovernment worker to be the actor in this game must be high in order to occur correctly. If the second actor is indeed a frustrated citizen looking to engage in a life of terror his payoffs are exceedingly different from all previous models discussed. Once nature has chosen that it is indeed a frustrated citizen then the recruiter has the option of either pursuing or not. If the recruiter does not pursue he loses a possible ally and the individual loses an opportunity to express his frustration, which results in a pay off of (-5, -2). If the recruiter does pursue, then the individual has a choice of either, joining and interacting with the recruiter or to not. If he ignores the recruiter, the recruiter risks exposure and the individual fails to utilize his frustration and act out which leaves the pay off of that pathway to (-8,-1). If the individual does choose to join which would be in both his and the recruiters best interest then the recruiter is given the option of giving the individual some sort of responsibility within the organization whether it be through training or gaining some form of intel or losing contact with the recruit. In this case, the recruiter will almost always choose giving the recruit some sort of training since he has already exposed his organization with a gained payoff of (10, 9). The ideal outcome for both actors would be resulting in the (10, 9) outcome due to the recruiters need to gain inside information and the recruits deep frustration with his host country. Therefore, it is in the recruiters best interest to choose pursue at the beginning when dealing with the Frustration Model. The SPNE for this game when $p \geq 18/29$ would be as follows:

SPNE	OUTCOME	PAYOFF
R: P	P-J-M	(10, 9)
I: N, J		
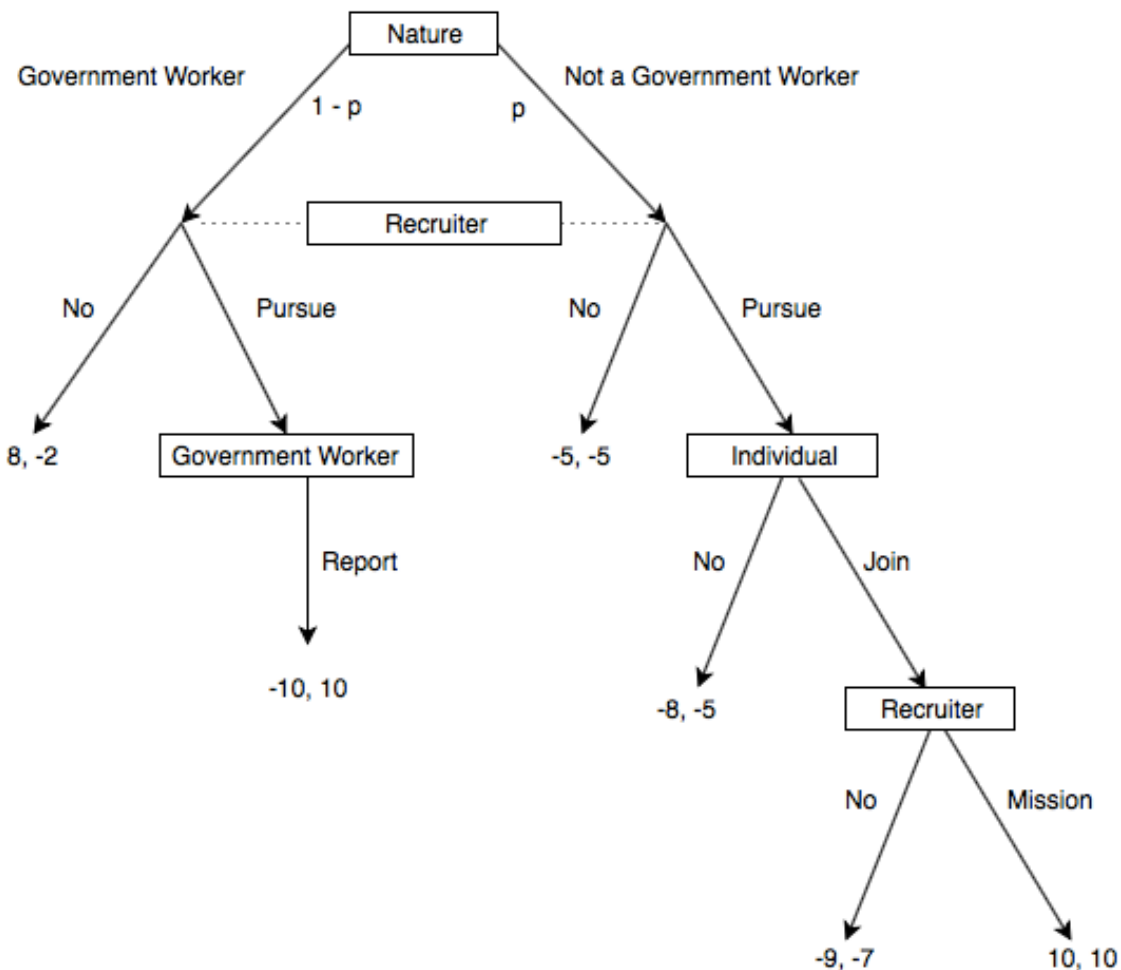
Religious Awakening Model

Another psychological influence that can adjust the basic model of possible interaction with an organizations recruiter can be a religious awakening. In this model, the recruit experiences some sort of religious awakening, which makes him more receptive to the idea of terrorism. This state of religious seeking is heavily influenced but not limited to trauma or hardships. The mind typically needs to find some method to cope with trials and religion is often a safe space for many to turn to. Take for example the traumatic events that took place on 9/11 and how many Americans resorted to some form of religion and offered prayers to his own God. Likewise, religious awakening is often a coping method for many. Due to the sensitivity of one's state and naivity when typically seeking a spiritual encounter, an individual is more willing to be fully committed to the cause. In this model, we are looking at an individual who has sought a religious awakening in the Islamic faith. It is important to note that physical jihad is a rare occurrence and rarely encouraged in the faith, however for the sake of this model we can assume that this is one of the rare cases in which the individual is ready to radicalize.

In this case, like the previous frustration model, both actors would ideally like the same outcome. Assuming that nature has chosen a citizen who is seeking religious awakening through the

means of jihad, the recruiter would want to pursue avoiding a loss of (-5, -5). The payoffs of each action are relatively similar since the individual is truly interested in religious awakening and will try anything due to the naive psychological state he is in, while the recruiter is encouraging such awakening for the ultimate purpose of gaining another member into the terrorist community. Both the actors involved lose gains when averting from cooperation in communication with the end goal of acceptance into the community. The best outcome for both actors is for the recruiter to recruit the individual and for the individual to then be receptive to the recruit which would lead to the recruit almost always giving the individual a way into the organization instead of letting that exposure go to waste. The SPNE of this model when p ≥ 18/29 is shown below:

SPNE	OUTCOME	PAYOFF
R: P	P-J-M	(10,10)
I: J		

Psychological Factors

According to various scholars, there seems to be certain similarities and characteristics in those who commit treason and become homegrown terrorists. Scholars such as Beutel, Olsson, and Stout all seem to compare the similarities found in the mentality of homegrown terrorists. According to Beutel, the observation of the psychological factors that play a role in the forming of a homegrown terrorist start with a cognitive opening or an impressionable platform for terrorist organizations to toy with (Beutel 2007). Eventually a frame alignment leading up to a trust and socialization with terrorists occurs (Beutel 2007). Stout, in agreement with Beutel, then states that a religious seeking is common with homegrown terrorism, although it is not the only reason for indulging in such acts. Some homegrown terrorists are formed through anger and a developed hatred of a nation - something that will be explained in my frustration model. He also proceeds to address certain qualities such as resentment and religious radicalism as a trait of many homegrown terrorists (Stout 2002). Olsson then writes about the life of Osama Bin Laden and characteristics he had such as resentment and isolation are common in terrorists (Olsson 2014). However, he is clear when he states that the mentality and these common characteristics are not formed over night (Olsson 2014). Another common characteristic addressed by Stout and Olsson is that these individuals are very intelligent and succeeded in schooling, in fact, sometimes it is their own eagerness to learn that drew them into the world of terrorism (Olsson 2014; Stout 2002). It is important to note that all human beings have different qualities and this is not to state that all terrorists are the same, however scholars have noted various similarities.

Implications

The importance in understanding homegrown terrorism is crucial in order to stop such organizations from thriving in America. The base model I used to demonstrate interaction between homegrown terrorism and an American was adjusted to fit three different kinds of personas that could come into contact with a recruiter. This was not to limit the possibilities but to show the ones in which scholars in the school of international relations have focused most of their research on. The majority of my research and use in game theory was structured around the pay offs and their meanings in relation to each actor while also factoring in probability and uncertainty. Intel involved in counter terrorist initiatives need to somehow identify which category or persona certain recruits are trying to attract, typically the Frustrated Model, and fit those characteristics in order to manipulate information out of recruiters. The psychological implications of each model were explained within the course of this paper, however, the main idea attained from this study was the concept of uncertainty and how the predictability of, or lack there of, psychological mechanisms could help identify a certain payoff rate as well as an overall desired outcome. Going forward if I were to expand my research I would love to utilize

case studies to fit into my models and see if rationality applied to such circumstances. I believe my research has conducted three main game theory trees that can be used when dealing with certain motives and characteristics of homegrown terrorism. Though the formation of certain game theory games, the schools of international relations and psychology become integrated in order to show uncertainty and payoffs within the models formed.

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