

Polycentric Defense: Security Provision in a Self-Governing Society

Christopher J. Coyne[‡]

Nathan Goodman[†]

Yahya Alshamy^{*}

Abstract

The claim that national defense is a public good resulting in severe undersupply without government provision is so widely accepted that the underlying tacit presuppositions are rarely considered, let alone questioned. The purpose of this monograph is to question the tacit presuppositions and offer a more realistic framework for understanding defense, broadly, and defense provision in a self-governing society. Potential threats to person and property are ubiquitous and highly diverse across time and geographic space. As we argue, so too are the various forms of defense that people adopt in the face of these threats. After laying out Polycentric Defense, an alternative theory for understanding security-provision, we present ten case studies as illustrative possibility proofs. These case studies range from defense in stateless Pre-Islamic Mecca to the African American civil rights struggle. They demonstrate diverse forms of security-provision in different contexts that emphasize the usefulness of local knowledge, autonomy, flexibility, dispersed power, and robust systems in the face of human error that polycentric systems allowed people to exploit across time and geographic space.

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[‡] Email: ccoyn3@gmu.edu. Address: Department of Economics, George Mason University, MSN 3G4, Fairfax, VA 22030, USA.

[†] Email: ngoodman@gmu.edu. Address: Department of Economics, George Mason University, MSN 3G4, Fairfax, VA 22030, USA.

^{*} Email: yalshamy@gmu.edu. Address: Department of Economics, George Mason University, MSN 3G4, Fairfax, VA 22030, USA.

1. Introduction

How can members of a free society protect themselves against internal and external threats against their person and property? In answering this question economists typically turn to the theory of public goods and argue for the necessity of the state for the provision of security by a national-level government. The underlying public good logic is evident in a leading principles of economics textbook:

The defense of a country from foreign aggressors is a classic example of a public good. Once the country is defended, it is impossible to prevent a person in the country from enjoying the benefit of this defense. And when one person enjoys the benefit of national defense, she does not reduce the benefit to anyone else. Thus, national defense is neither excludable nor rival in consumption. (Mankiw 2021: 213).

Beyond this one example, a broader analysis of fifty economics textbooks from three undergraduate courses (principles of economics, intermediate microeconomics, and public finance) found that 94 percent of the textbooks reviewed cite national defense as an example of a public good (Coyne and Lucas 2016). The widespread citation of national defense as the most reliable example of a public good has not changed in the past couple of years either (see Mankiw 2021; Frank et al. 2019). Defining national defense as a public good provides justification for government provision in the face of severe market failures.

The claim that national defense is a public good resulting in severe undersupply is so widely accepted that the underlying tacit presuppositions are rarely considered, let alone questioned. Tacit presuppositions refer to the underlying beliefs and assumptions that people hold regarding social organization, including the roles of the state and private actors in facilitating order (see Buchanan 1997 and Boettke 2018a). Regarding the mainstream treatment of defense as a public good, the tacit presuppositions are as follows:

1. The “nation” is the relevant marginal unit of analysis when considering defense.
2. Private people, left to their own devices, are incapable of providing adequate defense against internal and external threats.
3. In the face of these severe and inevitable market failures, “the state” can provide defense in optimal qualities and quantities.

The purpose of this monograph is to question the three tacit presuppositions and offer a more realistic framework for understanding defense, and defense provision, in a self-governing society.

For our purposes, the term “defense” is synonymous with security and entails protecting against, or resisting, a threat. These threats may be either internal to or external to society. Potential threats to person and property are ubiquitous and highly diverse across time and geographic space. As we argue, so too are the various forms of defense that people adopt in the face of these threats. Although social scientists often associate defense with the actions of nation-states, it is our contention that there is no reason to restrict the provision of security to the state, and then more specifically to state provision at the national level. Doing so unnecessarily limits the study of defense and the ability of social scientists to understand the world, which is characterized by diverse forms of security-provision.

Limits of the Mainstream View of Defense

The motivation for our analysis is that the mainstream view neglects four key aspects of real-world defense. First, issues of defense are not limited to the “nation” but, instead, are relevant in a wide array of contexts, both within and across nations. Many internal and external threats do not threaten

everyone within a nation but instead subsets of a nation. In the wake of the 2014 Ukrainian revolution, for instance, the Russian government invaded, and later annexed, the Crimean Peninsula. In doing so, the Russian government did not intend to occupy or annex all of the Ukrainian nation. Likewise, terrorist threats—whether internal or external—typically target segments of a population living within a nation. It is incorrect to frame these, and similar, threats at the level of the “nation.” Doing so neglects not only the conceptual issues involved—that many threats have externalities that are localized relative to the national level—but also the multitude of non-state means through which people provide security against such threats.

Second, when social scientists purport that the state must provide defense to solve a market failure, they are assuming that private people, left to their own devices, lack the creativity to provide the good that they, and others, genuinely value. From this perspective the potential for free riding is seen as a binding constraint that not only exists in the present, but that is insurmountable in the future. The problem with this approach was captured by Nobel Laureate Elinor Ostrom (1990) when discussing the benefits and costs to modeling tragedy of the commons situations as a Prisoner’s Dilemma game as is standard practice among economists. “What makes these models so interesting and so powerful,” she notes, is “that they capture important aspects of many different problems that occur in diverse settings” (1990: 6). At the same time, she warns, “What makes these models so dangerous—when they are used metaphorically as the foundation for policy—is that the constraints that are assumed to be fixed for the purpose of analysis are taken on faith as being fixed in empirical settings” (1990: 6).

Ostrom (1990, 2000) noted that the various theories of collective action, as found in the work of Mancur Olson (1965) and Garrett Hardin (1968) were really theories of collective *inaction* because the actors in the model were assumed to be helpless pawns trapped in a sub-optimal

equilibrium. These models dictate that incentives in collective action situations lead individuals to free ride resulting in sub-optimal outcomes. This neglects the ability of the players in the game to use their creativity to endogenously shape the game to obtain a superior cooperative solution without reliance on some exogenous, coercive force.

The same logic applies to mainstream economic treatments of defense. Modeling defense as a public good offers insight into one of the potential issues—the free rider problem—that *may* arise in the provision of defense. We emphasize the word “may” because there is no *ex ante* reason to believe that the free rider problem is always and everywhere a binding constraint in collective action situations. The free rider problem ought to be demonstrated rather than assumed. And even when potential free riding poses a challenge at a particular point in time, it may not in the future periods as parameters change through both endogenous and exogenous forces.

Third, the state provision of defense is often severely deficient because of epistemic and incentive issues. The key epistemic issue is that governments suffer from problem of preference-revelation related to determining the optimal quality and quantity of public goods to provide. The justification for the government provision of public good is that private actors, left to their own devices, will underprovide the good in question. This involves two assumption. First, when economists claim that governments must supply certain goods because of market failures, they are making claims about unobserved valuations on the part of private actors. They are assuming that private people value the good more than what is being supplied, hence the need for government coercion to provide more of the good. Absent access to people’s true valuations, however, it cannot be certain that this is case (see Rothbard 1956; Buchanan 1959, 1969). Second, and related, it is assumed that government decision-makers have access to the knowledge necessary to provide the optimal quantity and quality of the good to maximize the welfare of private actors. There is no

reason to believe that government decision-makers can overcome this epistemic constraint (see Rothbard 1956; Buchanan 1959)

The incentive issues with government are identified in a large literature in the field of public choice (see Mueller 2003; Rowley and Schneider 2004; Reksulak, Razzolini, and Shughart 2014; Congleton, Grofman, Voight 2019 for an overview), which identifies a number of pathologies in democratic decision-making. These frictions limit the effectiveness of government in providing goods and services, including defense, to citizens. Where issues like rent seeking, rent extraction, political opportunism, and bureaucratic dysfunctions result in incomplete or absent defense, there is space for non-state actors to fill the gap by providing security against threats.

Moreover, the mainstream treatment of defense assumes that the state-provision of defense is purely welfare-enhancing for citizens. From this perspective all defense-related actions by the state are aimed to protect the person and property of citizens while enhancing social welfare (Coyne 2015). In reality, empowering the state to provide security to citizens also empowers the state to potentially use those same capabilities to harm citizens. There is no shortage of historical examples of abuses by states turning their defense-related capabilities against their own citizens as a means of control and coercion (see Linfield 1990, Porter 1994, Rehnquist 1998, Schlesinger, Jr. 2004; Irons 2005, Walker 2012, Coyne and Hall 2018, Eland 2019). In these cases, the domestic government poses a threat to the security of citizens. Since the government itself is the threat, citizens are unable to rely on state-provided defense and must find other sources of security. The mainstream model of defense has limited explanatory power in these scenarios because it assumes not only that the state must provide defense but that it does so to advance the welfare of the citizenry.

Richard E. Wagner (2015) emphasizes the important distinction between plausible reasoning and demonstrative reasoning as it relates to the use of models. In the realm of plausible reasoning, models are a means for guiding thought about policy issues. This type of reasoning, however, recognizes that “there is much of relevance to those issues that cannot be collapsed into formal models—particularly judgment, sensibility, and tacit knowledge” (2015: 134). Demonstrative reasoning, in contrast, focuses on the model itself as the central aspect of analysis. Under this approach “[p]olicy discourse becomes a debate over models, in contrast to the classical use of models to assist a debate that ramifies well beyond any model” (2015: 134).

Grounded in demonstrative reasoning, the mainstream model of defense serves a straitjacket that limits the economic analysis of defense. In assuming that “the state” must always and everywhere provide defense based on the model of public goods and market failure, economists stop their analysis too soon. Real-world people are not automatons who predictably respond to constraints that are given and fixed. Instead, people possess the ability to creatively shape the constraints within which they live. This opens the possibility of devising conditions to avoid free rider problems either where they might occur, or where they already exist. The mainstream approach to defense excludes these possibilities from the start. We seek to remedy this situation.

Our Contribution

In order to address these shortcomings with the mainstream view, we present an alternative approach to thinking about defense grounded in mainline economics which is “defined as a set of positive propositions about social order that were held in common from Adam Smith onward... (Boettke 2012: xvii). These propositions are “(1) there are limits to the benevolence that individuals can rely on and therefore they face cognitive and epistemic limits as they negotiate the

social world, but (2) formal and informal institutions guide and direct human activity, and, so (3) social cooperation is possible without central direction” (Boettke, Haeffele-Balch, and Storr 2016: 4). Taking these propositions as our foundation, we recast defense in terms of a polycentric system.

A polycentric system is one where there are numerous decision-making units, each with autonomy in action, operating within a shared set of rules. A polycentric order stands in contrast to a monocentric order where there is a single centralized decision-making unit. Our polycentric theory of defense is one where dispersed groups of creative people find diverse and context-specific solutions to collective-action problems. In contrast to the mainstream view of defense, our approach moves institutional context to the foreground. Instead of assuming, *ex ante*, that defense is everywhere and always a public good for the nation, it is our contention that the specific nature of security depends on the institutional environment. Goods that constitute the broad and diverse category of “defense” are associated with varying scale of externalities which can be produced by a wide range of decision-making centers operating at various scales.

After discussing the conceptual foundations of polycentric defense, we provide a variety of case studies to illuminate its operations across an array of contexts and time periods. These case studies not only demonstrate the operation of polycentric defense, but also what is missed in mainstream treatments of defense which assume that the monocentric nation state is central to the provision of defense in the face of pervasive market failures.

Situating Our Contribution

Our analysis engages and blends several literatures. The first is the work of Elinor and Vincent Ostrom, and the Bloomington School of institutional analysis based on their research (see Aligica and Boettke 2009, Tarko 2017; Boettke 2018b; Aligica, Boettke and Tarko 2019). We draw on

these insights to challenge the mainstream view of defense and offer an alternative. Scholars in the Bloomington tradition have studied polycentricity in diverse arenas, including competitive market economies (V. Ostrom 1999, 2014: 49-58), scientific inquiry, federalism (V. Ostrom 1991, 1999, 2014: 49-58), common pool resource conservation (E. Ostrom 1990), municipal policing (Ishak 1972; Ostrom, Parks, and Whitaker 1973; Ostrom et al. 1973; Ostrom and Whitaker 1974; Parks 1979; Rogers and Lipsey 1974; Boettke, Palagashvili, and Lemke 2013; Boettke, Lemke, and Palagashvili 2016; Goodman 2017), education (E. Ostrom 1996), responses to climate change (E. Ostrom 2009); disaster recovery (Storr, Grube, and Haeffele-Balch 2018; Storr, Haeffele-Balch and Grube 2018), social capital networks (Craig and Goodman 2019), education (Strong 2020), monetary institutions (Salter 2020), and the ability of people to escape domination by others (Lemke 2020). Vincent Ostrom (1991: 240-243) briefly examines international order as a polycentric system and the implications this has for peace and defense.

A much smaller literature applies the ideas of polycentrism to defense provision. Makovi (2017), following Coyne (2015), argues that national defense is not a public good. Instead, Makovi contends that a polycentric system would allow military providers to discover the appropriate scale of production. Wiśniewski (2018) provides a critique of public goods theory and draws upon polycentricism to discuss a range of topics including defense and law. Berg and Shearing (2020) explore how polycentric policing in the Global South can enable effective security governance. Their analysis identifies the conditions under which polycentric orders enable the effective provision of security from the perspective of those residing in the system. Our analysis, which builds off of our prior work on this topic (see Coyne and Goodman 2020a), complements the existing scholarship by offering detailed analysis of the benefits of polycentric defense and a catalog of empirical examples that illustrate its relevance to the real world. In doing so, we also

contribute to the existing literature that explores alternatives to the state provision of defense by people relying on non-state forms of security against a variety of internal and external threats (see Sharp 1973, 1990, 1994, 2005, 2013; Scott 1985, 1990, 2009; Hoppe 2003).

Our analysis also draws on core themes emphasized by economists working in the Austrian tradition. These include subjectivism, human creativity and learning, entrepreneurship and discovery, and contestation and experimentation. Drawing on core Austrian themes, existing literature makes a connection between entrepreneurship and institutional change (see Leeson and Boettke 2009, Boettke 2014, Aligica 2018). Of this literature, our analysis is closest to Aligica (2018: 5), who provides an analysis of a bottom-up and decentralized “system of governance centered on a normative individualist recognition of the primacy of citizens’ values.” In doing so, he shifts analytical focus from seeing like a state—top-down forms of government—to seeing like a citizen, whereby people who reside in the system are active participants in creating, maintaining, and changing the various systems of governance that facilitate peaceful cooperation.

At the core of this framework is a notion of “public entrepreneurship,” a form of leadership which leverages voluntary association to engage in institutionally contingent problem solving and therefore carefully consider the context when addressing issues facing communities (Aligica 2018: 23). Our analysis connects these insights, along with the aforementioned scholarship on polycentricism, to provide a re-framing of defense provision. Although we focus on security, the logic of our analysis is applicable to a range of goods and services which are typically characterized as “public goods” and contributes to the literature on how private communities might provide goods with public characteristics (see Foldvary 1994).

In making this connection we also contribute to collective decision-making in a self-governing society (see Ostrom 1985; Aligica 2018; Boettke 2018; Aligica, Boettke, Tarko 2019).

One conception of society views the state as the source of order and security. From this perspective citizens have some role in decision-making—such as voting for representatives—but otherwise standard apart from the state in managing important affairs, such as the provision of defense. From this perspective citizens are incapable of self-governance due to an array of personal and collective weaknesses and failures. An alternative view—the self-governance view—views citizens as active participants in the management of their affairs.

Additionally, Austrians studied defense and public goods rigorously, and in doing so contributed to literature that is of crucial importance for understanding the establishment and maintenance of a self-governing society. We build on the contributions of Austrian economists in investigating the free rider problem, the nature and provision of public goods, as well as the consequences of centralization and decentralization in defense. In analyzing the free rider problem, Hummel (1990) points out that many societies, across history, have surmounted the free rider obstacle. A political group's creation of a democratic state, which is a public good itself, where there previously existed an authoritarian state is a prime example of groups traversing the free rider problem. Therefore, two possibilities suggest themselves: either people do not consistently seek the desired ends that the free rider presupposition suggests they do, or they seek their self-interest in a manner inconsistent with the free rider presupposition (Hummel 1990; Hummel and Lavoie 1994). Hummel (2001) further explains that the missing variable in most static models and assumptions, including the free rider presupposition, is the role of ideology. Ideology can change the way individuals view their self-interest and motivate them to seek social change even when the cost they bear is higher than material benefit would justify.

Hummel and Lavoie (1994; Hummel 1990) also distinguished between public goods and national goods to emphasize that national defense is frequently employed to maintain state

sovereignty, as opposed to protecting citizens' lives, property, and liberty (general security). The national good of protecting state sovereignty is conceptually distinct from the public good of general security and can potentially be a public bad to citizens by applying measures like conscription, rigid economic regulation, and suppression of dissent. Public bads are costs of services imposed on individuals who do not desire them or value them at their price. Individuals who are forced to share the costs of goods and services but do not enjoy the benefit, or experience a disutility because of it, are called forced riders. Rothbard (1981) gave the typical example of forced riders: pacifists who would not regard a tax levied for his or other's defense using violent means as a desirable service, rather a public bad. More broadly, people opposed to their national defense policy are forced riders too.

Furthermore, Scholars in the Austrian tradition presented a couple of ways entrepreneurs in self-governing societies can provide defense without relying on centralized governments. One way private communities can provide defense, and other goods with public characteristics, is to provide them as package deals. Restaurant owners do not charge for nonexcludable lighting separately. Instead, the price of lighting is figured into the meal and priced as a package. Block (2003) suggests that public goods, including defense, may be provided as loss leaders in the same way that walkways in malls are free to use. Many Austrians underscored that the most likely candidates for providing defense services in a self-governing society are insurance agencies (Rothbard 1993; Hummel and Lavoie 1994; Hoppe 1998; Murphy 2010). Their primary reasoning was that well-secured property would have lower damage claims and hence lower costs to insurers. Thus, it is in an insurance agency's best financial interests to provide efficient protection. They also emphasize that many insurance agencies operate on a national and international level, and own large property holdings dispersed over wide territories. Therefore, on the margin of economic

means, in human and physical resources, they also appear to be adequate candidates for private defense provision (Hoppe 1990).

Austrians have also studied decentralized defense provision, or polycentric defense, presenting its relative advantages. Rothbard (1978: 298) notes that decentralized defense usually relies on guerrilla tactics that make it difficult for foreign invaders to maintain their control over conquered regions, citing Vietnam and Medieval Ireland's strategy against the U.S. and Medieval England, respectively. Expanding on Rothbard's point, Long (2007) notes that centralized defense provision may compromise security by exercising control from a single command center, citing that centralization historically made it easier for an invading enemy to defeat a nation by conquering the command center. He emphasizes that an important key to highly effective defense is organization without centralization. Stromberg (2003) advanced the point that decentralized defense is more efficient and less unjust because it makes coordination for offensive strategies less effective and for defensive strategies more effective.

The mainline and mainstream orientations have very different implications for the way we think about matters of public administration, including the provision of defense. The mainstream approach to defense results in economics being viewed as a tool of social control "that sees the necessity of a single hierarchical government that must induce compliance from its citizens" (Boettke 2018: 956). Following Buchanan (1964), however, the mainline self-governance approach emphasizes that the focus of economics is on the study of coordination and the institutions within which coordination takes place. We contribute to the self-governance approach by emphasizing not only institutions, but the role of the citizenry as active participants in the process of supplying security of their person and property.

2. Theoretical Foundations

Public Goods Theory

The foundations of the mainstream theory of defense can be traced back to the work of Richard Musgrave and Paul Samuelson. Beginning with his dissertation in 1937, Musgrave made a distinction between individual wants and collective wants (Desmarais-Tremblay 2017: 63). In his accounting the former could be satisfied by the market economy while the satisfaction of the latter relied on the public economy. Although far from a detailed theory of public good provision, Musgrave's distinction created an entry point for the subsequent developments of public good theory and arguments for state provision (Desmarais-Tremblay 2017: 63).

In subsequent work Musgrave (1939) laid out the logic of free riding, although he did not use that specific term, associated with collective goods.¹ According to Musgrave (1939: 219-20 fn 5),

We note the theoretical difficulty which arises for the voluntary exchange theory in the event that some of the members of the community should attempt to benefit from public services without in turn being eager to contribute their share. While recognized as constituting a 'pathological group' ... they are ruled out by the assumption of purely voluntary action. Assuming, however, for the sake of argument that all people act in the prescribed 'pathological' manner, the following problem arises: if the total cost of public services is covered by a large number of contributors, a reduction in the contribution of any one contributor will fail to affect notably the total supply of public services – either from the point of view of this contributor or in the eyes of other contributors who join in the consumption of the same indivisible services. Hence the reduction will result in a gain for the contributor in question without leading to reprisals. If all contributors should accordingly decide to reduce their contributions, the volume of public services will tend to shrink, and an unstable situation will result.

¹ Desmarais-Tremblay (2017: 66) notes that the term “free riding” was introduced to the public finance literature by Buchanan (1964).

Two years later, Musgrave (1941: 320, fn 4) noted the non-excludable nature of collective goods, writing that “the individual members of the community will attempt to minimize their contributions, knowing that they can not be excluded from the benefits.” The logic of non-excludability and free riding remains the central theoretical argument for the assumed under provision of public goods by private actors and the need for exogenous (state) intervention to fill the gap.

The idea of public goods is often associated with Paul Samuelson who wrote two seminal papers formalizing the theory in 1954 and 1955. In these papers Samuelson specified the conditions for the efficient allocation of goods with public characteristics. These goods were non-excludable but also non-rivalrous such that one person’s consumption “leads to no subtraction from any other individual’s consumption of that good” (Samuelson 1954: 387). In Samuelson’s way of thinking, this logic provided a positive argument justifying state intervention. Regarding the inability of private individuals and markets to resolve the public good problem, Samuelson (quoted in Desmarais-Tremblay 2017: 73-4) noted that

This last finding of the theory was resisted by many modern writers (such as S. Enke, J. M. Buchanan, Charles Tiebout, Ronald Coase, and Milton Friedman) just as Wicksell, Lindahl, and older writers had unsuccessfully wrestled with the same issue. Still a logic is a logic and facts are facts. No one of the writers named, or anyone else to my knowledge, has been able to refute the theorem: [...] there is no decentralized algorithm (pricing or otherwise) that will both define an equilibrium and (without central intelligence or coercion) motivate individuals to achieve it. If this fact about the universe be deemed a sad fact, it is not one of my making. Nor is it a new fact: it existed even before 1776; only our full knowledge of it is new.

From this perspective, if efficiency is the goal, there is no alternative to state provision of goods that are deemed to be public in nature. Indeed, since the 1950s, national defense has become the textbook example of a public good taught to generations of students (Coyne and Lucas 2016). As

subsequent scholarship would make clear, the mainstream approach to public goods is too simplistic and overlooks important nuances. This has important implications for our understanding of defense provision in the actual world.

Moving Beyond Simple Dichotomies

The rise and entrenchment of the Musgrave-Samuelson view of public goods had important implications for the way that economists viewed the nature of goods and their provision. In this view goods could be understood within the basic public-private dichotomy and the “domain of the political is unlimited” as government becomes viewed as means of correcting market failures which can be identified by an analyst who steps outside of society and judges the operations of society against a benchmark of efficiency (Wagner 2015: 135).

Some economists noted problems with the private-public dichotomy and sought to offer refinement and clarification. Buchanan (1965) developed a theory of club goods—goods which are excludable, but rivalrous up until a point of congestion. For example, a private swimming club is excludable—non-payers can be prevented from entering—but non-rivalrous up to a point where there are so many swimmers that they encroach upon other swimmers in the pool. Buchanan’s analysis of clubs was important because it offered insight into how goods with public characteristics could be provided privately and voluntarily.

Coase (1974) explored the organization of lighthouses in Britain which were funded through the collection of tolls. Many economists characterized lighthouses as public goods because the service they provided was assumed to be non-rivalrous and non-excludable. Coase showed how private parties could devise arrangements to overcome the theoretical challenges provided by these conditions to offer lighthouse services.

Vincent Ostrom and Elinor Ostrom (1977) noted that in public administration many goods cannot be, *ex ante*, categorized in a simple public-private dichotomy. Depending on the context, the same good or service may be more or less private or public. Moreover, a context at one point in time may differ from a context in future periods due to factors such as changes in consumer preferences and changes in production technologies or organizational forms.

The common theme across these authors is that real-world goods and services are not easily captured by the private-public goods distinction. Of course, engaging in an exercise like Coase (1974) to show how a good or service, which is presumed to be a public good is provided through private arrangements, does not, by itself, undermine the theory of public goods. What such efforts do demonstrate, however, is that it is inappropriate to *ex ante* assume that a certain good or service is always and everywhere a public good resulting in market failure that necessitates state intervention. Context matters, and Buchanan, Coase, and Ostrom and Ostrom, among others, emphasize that focus needs to be on institutional arrangements as compared to resource allocations relative to some benchmark of efficiency.

The focus on context can be traced back to Adam Smith who emphasized the importance of institutional arrangements instead of specific resource allocations because the latter emerged from the former (see Rosenberg 1969). Although institutions were increasingly pushed to the background with the adoption of formalistic equilibrium models in the twentieth century (see Boettke 1997; Boettke, Coyne and Leeson 2003), some economists continued to emphasize Smith's point about the importance of context for coordination and resource allocation.

In his review of Abba Lerner's *The Economics of Control*, Friedman (1947: 405) noted that "the institutional problems [of how resources are allocated] are largely neglected and, where introduced, treated by assertion rather than analysis." Resource allocation, however, does not take

place in a vacuum, but instead in a set of institutional arrangements (economic, legal, social, political) which influences resource allocation. Along similar lines Buchanan (1982) noted that order emerges from an institutionally contingent process. Order does not exist prior to, or independent from, the process through which it emerges. This has implications for how social scientists orient their study of human society. Focus is not on the allocation of resources but instead on the process of coordination and the institutions within which this process takes place (Buchanan 1964).

Implications for Defense

Defense is Not Necessarily a Public Good

When we place focus on institutional arrangements and the contexts within goods are provided, it becomes clear that defense should not be considered, *ex ante*, to be always and everywhere a public good. Once we appreciate that the specific context within which goods are provided matters, it becomes clear that the private-public characteristics can vary greatly. As Tyler Cowen (1985: 53) notes, “nearly every good can be classified as either public or private depending upon the institutional framework surrounding the good and the conditions of the good's production.” In other words, varying the surrounding institutional context changes the characteristics of the specific goods that fall under the broad category of “defense.”

To illustrate this point, consider the example of a missile defense shield provided by a nation state and intended to protect the nation from external missile attacks (see Cowen 1985, Hummel 1990, Hummel and Lavoie 1994). Within the mainstream Musgrave-Samuelson framework the defense shield would be modeled as a public good since defending one person from an external missile attack does not reduce the amount of protection available to others (the non-

rivalry criteria), and because defending against an external missile attack does not allow some people to be excluded for non-payment (the non-excludability criteria).

Things look different, however, when one appreciates the context within which defense is provided. Instead of treating the marginal unit of defense as the missile defense system in its entirety, consider the missiles themselves. Individual missiles are non-rivalrous and non-excludable from the perspective of “the nation.” If an individual missile is used to protect a city on the west coast it cannot simultaneously be used to protect the east coast. From this perspective the missile is rivalrous which means it no longer satisfies the conditions of a Musgrave-Samuelson public good. Likewise, it is possible, at least in principle, to exclude non-payers. While it may be difficult to single out a specific person or house for non-payment it is much easier to exclude a city from protection.

This logic can be generalized beyond missile defense. A bomb shelter fits the criteria of a club good—it is excludable and non-rivalrous up to a congestion point—and not a public good. Or, as another example, consider instances of protection of specific targets from terrorist threats within a geographic territory. These efforts are rivalrous—resources allocated to protecting one potential target cannot simultaneously be used to protect another—and excludable—non-payers can be excluded from the protection against terrorist threats. These factors are the result that terrorist attacks are typically local in nature and therefore can be met with local responses. As this illustrates, as the relevant marginal unit changes, so too will the public-private characteristics of the good. In order to appreciate this point, one must move beyond the default marginal unit of “the nation” when considering matters of defense.

Existing constraints are not immutable. Instead, purposive actors are able to shape, influence, and change the world within which they live. This change can emerge spontaneously—within an existing set of rules—by design, or some combination thereof—e.g., a design to change to rules which then generate an undersigned outcome. Scholars from across a variety of disciplines—economics, political science, sociology—have identified numerous ways that people might resolve collective action problems. These solutions can be broken into four major categories (Lichbach 1994, 1996, 1998).

The first category includes market solutions. These solutions are unplanned and spontaneous. One example would be an entrepreneur who develops a new technology that allows the user to exclude non-payers. As technologies change, so too does the nature of goods. In other words, goods that previously had public characteristics may, as the result of entrepreneurial innovation, become more private due to the ability to exclude non-payers. An appreciation of entrepreneurship also leads to the realization that even *if* defense has public good characteristics this does not, *ex ante*, imply that state provision is required to provide security. This is because it is possible for private individuals to work together to provide defense.

As another example, assume that people can potentially join together to provide defense against some internal threat to their security, but are limited due to asymmetric information regarding the specifics of what others are going to do. Entrepreneurial innovations in technology, such as the introduction of social media, can reduce information asymmetries and lower the cost of coordination, making it easier for private people to effectively provide defense through shared expectations.

The second category entails community-based mechanisms such as social networks, bonds, and social institutions. Marwell and Oliver (1993) emphasize the importance of social movement

organizers for building and leveraging networks around a shared cause. From this perspective organizers are a type of entrepreneur who coordinate people to overcome collective action problems associated with social movements. Among other things, organizers engage in “selectivity” in which they rely on their specific knowledge of the community to focus their mobilization efforts on the select members who are likely to contribute to the success of the cause (Marwell and Oliver 1993: 130). As we will illustrate in subsequent case studies, community networks are often crucial to overcoming collective action problems associated with the non-state provision of defense.

A third category of mechanisms includes contracting by the parties involved in the collective group effort. The contracts are often not formal and do not require enforcement by a formal, state-provided legal apparatus. Instead, groups of people can engage in self-governance through context-specific rules. In her research on governing the commons, Elinor Ostrom (1990) noted how, under certain circumstances, people can utilize existing rules to overcome textbook predictions about overuse of resources. The “rules in use” delineate who can access the resource, when they can access it, and how they use it. They also include means of monitoring members to ensure compliance, and mechanisms of accountability and punishment for rule violations.

Similar logic can be applied to the non-state provision of defense. One of the central issues with defense provision is the possibility of free riding by some off the efforts of others to provide security.² If the incentive to free ride is sufficiently strong, security will be underprovided or not provided at all. An appreciation of the possibility of Ostromian-style self-governance, however, suggests one potential solution to overcoming these challenges.

² This problem was identified by Tullock (1971) in the context of revolutions.

The final category of mechanisms entails hierarchy with clear lines of authority. If there is a leader trusted by participants in the collective action problem, then that person can leverage their position of authority to overcome principal-agent problems and information asymmetries. In doing so, an effective leader can overcome issues of free riding while also ensuring coordination among participants toward the shared goal of the group.

To illustrate this logic, consider the work of Gene Sharp (1973, 1994, 2005, 2013) on non-violent action, which is one form of non-state defense against internal and external threats. A central theme in his work is that non-violent action is not a random and chaotic affair. Rather, effective organization requires leaders who are thoughtful and respected among the participants. To be effective leaders need to understand the context-specific dynamics of the situation and have the ability—skills, legitimacy, and standing among participants—to guide those involved through the significant costs involved in combatting threats which are often extremely repressive.

Recognizing the numerous and diverse mechanisms for resolving collective action problems leads to three implications. First, even where defense more closely resembles a Musgrave-Samuelsonian public good, it does not mean that the good of security must be provided at a single scale—e.g., “the nation”—by a single state. Second, even if a specific type of defense has Musgrave-Samuelson public good characteristics it does not automatically imply that state provision is required. Private actors may be able to resolve the challenges which might otherwise prevent the provision of security. Third, it is conceptually possible for individuals to resolve collective action problems associated with the group provision of defense against a range of threats. Public goods, and the nature of the collective action problems involved, differ in the scale of the externalities involved. Along these lines, Wiśniewski (2018: 43-62) differentiates between short-range, mid-range, and long-range protection goods depending on the scale of the good.

Short-range protection goods (e.g., home security) have few, if any, positive spillovers. Mid-range goods (e.g., local patrols) have broader spillovers relative to short-range goods, but fewer relative to long-range goods (e.g., nuclear deterrence weapons).

The mainstream view of defense assumes that security entails at the scale of the entire nation, meaning the good must be provided at the national level. Moreover, the mainstream view assumes that the collective action problems involved are so severe that private people, left on their own, are unable to resolve them absent some kind of exogenous intervention from the state. In practice, however, defense is not a single homogenous good. Instead, it is a set of diverse activities that vary greatly in specifics, including the scale of the externality. In addition, it is possible for people to resolve the challenges posed by collective action problems associated with defense provision. Together, these realizations open the door for a consideration of polycentric defense.

2.2 Monocentric vs. Polycentric Systems

A monocentric system is one where there is a single decision-making unit with monopoly control over policy and the distribution of resources. The mainstream model of defense is monocentric—it assumes defense provision by a single provider—“the state”—in a homogenous form for the welfare of “the nation.” A polycentric system, in contrast, is one with numerous, overlapping units of decision-making which operate under a general set of shared rules.

The concept of polycentricity can be traced back to Michael Polanyi (1951) who in his book, *The Logic of Liberty*, made the argument that what allowed success in science was the contestation of ideas through open-ended inquiry and experimentation.³ The contestation of ideas, in turn, required a polycentric structure which enabled scientists to pursue ideas and conjectures

³ For more on the history of polycentricity, see Ostrom, Tiebout and Warren 1961; V. Ostrom 1999, 2014; Aligica and Boettke 2009; Aligica and Tarko 2012; Tarko 2017.

within a shared set of rules that governed scientific activity. Among the rules necessary for successful science are norms supporting the pursuit of truth, honesty, respect for prior discoveries, autonomy to pursue one's interests and conjectures, reciprocity between scientists, and judgement based on scientific scrutiny and replicability instead of on personalities. Other applications of polycentricity are markets economies, competitive public economies, legal arrangements, and international relations (see V. Ostrom 2014: 49-58; Tarko 2017: 58-64).

The most systematic scholarly treatment of polycentricism is found in the work of Vincent and Elinor Ostrom. Indeed, an appreciation between the distinction between polycentric and monocentric orders is one defining feature of the "Bloomington School" of political economy (named after Bloomington, Indiana, which is the location of Indiana University where Vincent and Elinor spent most of their academic careers and established The Workshop in Political Theory and Policy Analysis in the 1970s). As Aligica and Boettke (2009) and Tarko (2017) document, the Ostroms' research program incorporated the concept of polycentricity in the study of social institutions from ethical, theoretical, and empirical perspectives. Given this foundation, it makes sense to extend the logic of polycentric systems to defense to offer a more nuanced and richer theoretical and empirical understanding of security provision.

2.3 Benefits of Polycentric Systems

Polycentric systems offer several benefits as compared to their monocentric counterparts. We discuss these benefits in the context of defense provision.

First, polycentric systems allow people to leverage local, context-specific knowledge. In contrast to a monocentric system, where there is a single unit with decision-making authority, polycentric systems allow people to "select those strategies that are anticipated to enhance their

net welfare potential” (V. Ostrom 1999: 57). This is especially important in the context of defense provision which requires co-production to be effective.

Co-production refers to goods and services which require direct input and active participation by consumers (see E. Ostrom 1996, Aligica and Tarko 2013). Many goods do not require co-production in order to be supplied. Consider, for instance, a computer where there is a clear separation between production and consumption. But for some goods co-production is crucial to effective provision. Consider education where success requires active participation and learning from students. If students refuse to actively participate then education will not be produced even if the teacher is motivated and engaged.

Similar logic applies to the provision of security whereby consumers contribute in a variety of ways. Concrete examples include, but are not limited to, locking doors, individually monitoring activity in local communities, upholding social norms that discourage crime and violence, and participating in various community groups to police communities or to respond to internal or external threats to safety (Goodman 2017). In her analysis of urban planning policies, Jane Jacobs (1961) captured the importance of co-production, noting that citizens going about their daily lives deter crime by serving as “eyes on the street.”

Additional examples of co-production were evident in the United States following the September 11, 2001 terrorist attacks. On the day of the attacks, private people on Flight 93 were able to coordinate to prevent terrorists from striking their target (see Scarry 2002). Over subsequent years private people thwarted terrorist attacks as evidenced by the cases of Richard Reid (the “Shoe Bomber”) in 2001 and Umar Farouk Abdulmutallab (the “Underwear Bomber”) in 2009. In each of these cases private people were able to effectively provide protection against threats without relying on the monocentric state alternative. In general, polycentric systems empower citizen co-

production by allowing people to leverage local norms, knowledge, and societal trust at the community level.

Second, polycentric systems allow for autonomy, contestability, experimentation, and flexibility. Because there is no single decision-making unit polycentricism encourages ongoing discovery and competition between ideas and organizational forms which allows people to determine how to best meet their diverse ends. Polycentricity creates an environment that facilitates for entrepreneurs to innovate and satisfy consumers. Moreover, pressures created by the possibility of exit can contribute to knowledge and incentives regarding citizens' preferences while disincentivizing abuses of power (Tiebout 1956; Ostrom, Tiebout and Warren 1961). Along these lines, Elinor Ostrom (2005a: 3) noted that "...competition – of vying for citizens to resolve problems and procure services in an urban neighbourhood – is one method for reducing opportunistic behaviour even though no institutional arrangement can totally eliminate opportunism with respect to the provision and production of collective goods." This helps to mitigate a problematic feature of monocentric defense which entails numerous principal-agent problems associated with secrecy and monopoly control over information and policy which can lead to political opportunism (see Koppl 2018: 221-233; Coyne, Goodman, Hall 2019).⁴

The autonomy, competition, and flexibility associated with polycentric systems allows people to satisfy a diversity of preferences related to security where monocentric alternatives are not available. Consider, for instance, the case of African American activists during the Civil Rights movement in America. Precisely because these individuals were trying to change state institutions to combat racism, they could not rely on state-provided monocentric security to protect them against violence. Given this gap in security provision, public entrepreneurs in African American

⁴ For more on how polycentricity and interjurisdictional competition can alleviate principal-agent problems in governments, see Müller 2019: 163-173.

communities organized local groups to provide protection against violence (see Cobb 2015, Beito and Beito 2017).

In general, polycentricism allows people to customize defense provision to meet their context-specific circumstances and needs. In contrast to the “one-size-fits-all” solution imposed by a monocentric state provider, a polycentric system allows for a wide range of diverse outcomes across decision-making units. This aspect of polycentricism is especially important in a dynamic, open-ended system where tastes, technology, and demographics often change resulting in the need for a new mix of goods and services. Because a monocentric system of defense is characterized by a large-scale bureaucratic hierarchy between providers and consumers, it is more likely that responses to these changes will be lethargic, if they occur at all.

Third, polycentric systems, relative to monocentric systems, offer a more robust system in the face of human error and imperfection. Because monocentric systems are centralized in a single decision-making unit there is a single point of failure. If centralized mechanisms of coordination and conflict resolution fail, so too does the system as it will not operate in the desired manner. Under polycentricism, in contrast, failure by any single unit in the system does not threaten its overall stability. As such, polycentric systems disperse risk and foster a robust environment in light of the fact that “humans have complex motivations including narrow self-interest as well as norms of proper behaviour and other-regarding preferences” (E. Ostrom 2005b: 119) and that “[h]uman beings are neither all-knowing saints nor devilish knaves” (E. Ostrom 2005b: 132). As the aforementioned responses to the September 11 attacks private persons in the United States illustrate, sole reliance on a monocentric order would have resulted in additional terrorist attacks as compared to what happened as a result of allowing polycentricism to operate.

Fourth, polycentric defense disperses power. A central issue in constitutional political economy is the “paradox of power” associated with empowering government. The paradox is that a government empowered to do good can also use those powers for bad. That is, government can use its powers to potentially protect citizen rights and engage in productive behaviors, but it also can use those powers to engage in predatory and unproductive activities which harm citizens.

To provide a concrete example, consider the U.S. government’s significant investment of resources in cybersecurity and cryptography. The stated purpose of these investments is to protect the domestic populace from cyber invaders. However, these same technological advances have been used by the U.S. government to surveil the very people they purport to protect. This includes surveilling domestic and foreign communications (by U.S. persons), demanding backdoor access to encryption by private organizations, proposing restrictions on encryption, and purchasing private encryption companies (see Zetter 2013, Sanger and Frenkel 2018). In response, civil liberties groups have encouraged internet users to engage in self-defense against state surveillance by adopting encryption technologies to protect private communications and data (see Zetter 2014).

This example highlights a key issue with monocentric defense, which is that a monopoly possessor of force may use those large-scale powers to harm the people it supposedly protects. When this occurs, the monocentric system becomes a direct threat to the security of citizens. The typical solution to address this situation is a formal constitution which limits the powers of the monocentric state and creates checks and balances. However, in matters of national security, both theory and history demonstrate that there is significant slack in these constraints and that there is substantial space for narrow opportunism on the part of those who possess political power (see Linfield 1990, Rehnquist 1998, Schlesinger, Jr. 2004; Irons 2005, Cole and Dempsey 2006, Cole and Lobel 2009, Walker 2012, Coyne and Hall 2018).

A polycentric system disperses power across numerous decision-making units which can mitigate the potential harms of monocentric defense. Rather than power concentration, polycentricism offers the potential for power dispersion. This is not a guarantee against all abuses of power, but it is a means of ensuring that when abuses occur, the magnitude is limited as compared to a situation where the perpetuating party possesses large-scale monopoly control over force in society.

Return again to the case of the U.S. national security state and cryptography. The monocentric agencies that carry out the surveillance (mainly the National Security Agency (NSA) and Central Intelligence Agency (CIA)) have sovereign immunity and the power to forcibly collect revenue using a large-scale centralized state apparatus. This means that they are insulated from both contract enforcement and market discipline. Because the NSA and CIA are exempt from the incentives created by polycentric orders, there is space for them to engage in narrow opportunism that benefits the interests of those in power as compared to the private persons whose interests they professedly represent. Polycentric defense provision offers one means of mitigating these effects.

In what follows we offer an array of real-world illustrations of polycentric defense. These illustrations vary in their timing, geographic location, scale, and scope. Our aim is to show the, often overlooked, ubiquity of polycentric defense while illuminating the theoretical insights discussed above. These cases are meant to be illustrative, showing the possibility of polycentric defense. We are not claiming that they constitute a normatively desirable organization or that polycentric defense is a panacea. Instead, these cases illuminate an often-overlooked phenomena and illustrate the theory discussed above.

3. Illustrations of Polycentric Defense

3.1 Intelligence Collection in Somalia's Wabeeri District

Somalia, having been a failed state for decades now, suffers from deficient state capacity and high rates of terrorism. A significant part of security provision in areas battling constant terrorism is intelligence collection. With the ostensible intention to help Somalia, developed countries inject foreign aid into security programs to compensate for the indigenous government's limitations. ForiegnAssistance.org extensively records United States' foreign aid to Somalia's security sector, mostly through USAID and Department of State, and usually in collaboration with NGOs or private agencies.

Unfortunately, "a growing culture of protection fees and other financial injections from humanitarian organizations resulted in humanitarian assistance becoming increasingly embedded in the political economy of violence" in Somalia, as an Overseas Development Institute study soberly concluded (Hammond and Vaughn-Lee 2012). Moreover, the excessive injection of aid into security and intelligence programs disequibrated labor markets. It introduced perverse incentives for a large number of laborers to enter into the now lucrative security sector and to perpetuate insecurity so that their presence is deemed necessary (Menkhaus 2016).

In 2015, the Mayor of Mogadishu introduced Somali neighborhood watches in Mogadishu and other cities as a locally acceptable and cost-efficient alternative. The 2015 proposal was named the Wabeeri Scheme. The mayor developed the Wabeeri Scheme with British support to enhance counterterrorism efforts like monitoring and reporting to the Somali government, both tasks the government failed to execute adequately (Hills 2016).

Alice Hills (2016, 2019), an expert in police development and sub-state security, documents the Wabeeri Scheme dynamics that made it successful. Her work underscored the role of community mobilization drawn from indigenous Somali practices used in the 1970s and 2000s instead of international models of community policing in Mogadishu's individual districts. The Wabeeri Scheme consisted of a structured plan for local collection. It appointed volunteers as community representatives responsible for collecting information on suspicious individuals and vehicles. The community representatives then share the gathered information with a team that analyses it to understand the local community's relevant security concerns. The team, finally, passes the collected data to government agencies like the Somali Police Force, Ministry of Internal Security (MOIS), and National Intelligence Agency (NISA), demonstrating co-production of security. Through the designated channels, the intelligence is eventually shared with the police force's Community Policing and Public Relations Division, the city's district commissioners, and the Banaadir Regional Administration.

The Wabeeri Scheme operated particularly well compared to other models of intelligence collection and community policing because it was capable of leveraging local knowledge for a delicate form of security provision: intelligence collection. For Somali communities who have been victims of terrorism, intelligence is a crucial aspect of security. However, the Scheme required social acceptance and cooperation to stick. Therefore, community representatives administered several community-based mechanisms to tackle their community's skepticism about the program, offering their knowledge of local skills and needs.

The Scheme provided welfare support to volunteers, free meals like a bowl of dhal, as compensation for street cleaning, which facilitated social acceptance and toleration of the program. The provision of meals was a practical way to gain the trust of locals by administering incentives

that can mobilize volunteers (Hills 2016). Like previous international security programs in Somalia, the Scheme partially relied on foreign aid to subsidize the costs of collective action. What makes it stand out is its efficient use of local knowledge, facilitating the emergence of context-specific solutions to collective action problems.

Another example of how the Scheme leveraged local knowledge is demonstrated by the way community representatives recruited and trained volunteers. Recognizing that Somali literacy is low, the community representatives delivered the training using songs, play-acting, and small-group explanations (Hills 2016). The training was so successful at educating the volunteers and enhancing social cohesion that Wabeeri's district commissioner requested that her leadership team be included in the program. By the end of 2015, 700 people had been trained in the Scheme's community intelligence collection strategy (Hills 2016).

Another advantage of the Scheme's community-based mechanisms is that community representatives are subjected to fewer perverse incentives, given they are more likely to be responsive to their own communities. They are not protected by the cultural standard of low moral expectations like government agents, whose abuse is expected and sometimes normalized. Government agents frequently have legal doctrines that shield them from being prosecuted for discretionary abusive actions, making them less responsive to popular dissatisfaction. On the other hand, the Scheme's volunteers were more likely to overcome pecuniary self-interest given the program operates in their localities.

Underscoring the community-based mechanism, the program is primarily run by volunteers with shared interests: women who want to see their communities secure. In the first three months of 2016, "58% of complainants were women, 34% were children, 6% were elderly men and women, and 2% men" (Hills 2016). Women empowerment in Somalia was an unintended

benefit of the Wabeeri Scheme's community neighborhood watch program. Female contributions to society in ways that the community values may give other women a more comprehensive range of freedom.

The Wabeeri Scheme yielded impressive results shortly after its implementation. By "November 2015, there were 44 arrests attributable to neighborhood watch sources, 49 weapons seized, 41 suspicious persons identified, and 17 suspicious vehicle reports resulting in actionable intelligence. March 2016 figures show that 2,152 public complaints were received, resulting in 1,492 cases being solved" (Hills 2016). Although these statistics may seem unimpressive to security experts, it is crucial to note that no other program under the Somali federal government produced superior security figures.

Furthermore, the Wabeeri Scheme is less costly than previous state-run programs, with only six paid field workers who are tasked with administration. Due to the more efficient utilization of knowledge and absence of bureaucratic constraints, the Scheme enabled local agents' mutual expectations of sequential action to actualize. It allowed local agents to revise and optimize the number of people involved, and the skills needed to perform more effectively. Comparatively, government agents and police expected salaries, and frequently, large amounts of bribes. Government agents also frequently lacked the local knowledge of how many more intelligence gatherers were needed in the area. Even when they are aware that the number of intelligence gatherers needs to be adjusted, bureaucracies tend to slow down the adjustment process.

Hills (2019) shows that while neighborhood watching has become a part of Wabeeri's everyday life, the introduction of sophisticated technologies capable of digitally and effectively capturing real-time events did not play a part in intelligence collection or the monitoring of terrorist threats. Information in Wabeeri is largely shared and delivered by using conventional methods

such as word of mouth, rather than by newly available technology like mobile telephones or social media. Counterintuitively, the proliferation of new technology like CCTV has resulted in the reinforcement of older ways and strategies of intelligence collection and security provision. The fact that policing practice has not been reconfigured with the influx of new technology shows how rules-in-play reflect local preferences.

The initial goal of the Wabeeri Scheme was to increase the role police and district commissioners played in counterterrorism to balance the influence of the NISA. It surpassed expectations by improving communication between the federal government and victimized communities and expanding security. The Scheme expresses the value communities in Somalia place on social capital and knowledge searching because it leverages local knowledge and fills the gaps of low state capacity. Despite expert skepticism, the Wabeeri Scheme proved itself to be viable in a way that internationally-driven monitoring strategies of non-local agents were not.

3.2 The African American Civil Rights Movement

Until the mid-1960s, Jim Crow laws mandated segregation of businesses and public spaces throughout the American South. In addition to being legally enforced, segregation was upheld through lynching and other forms of violence by white supremacist groups like the Klan. Many people, particularly African Americans who were relegated to the status of second-class citizens, wished to cast off this regime of racial segregation. The civil rights movement's overall goals would benefit African Americans and supporters of integration regardless of their participation in the movement, which means there were incentives to free ride rather than engaging in the costly and risky work of civil rights activism. How did activists overcome this collective action problem and create incentives for others to help them produce public goods? Part of the answer involves *selective incentives*, or excludable private benefits for those who

participate in collective action. For example, there were a variety of private benefits associated with membership in the National Association for the Advancement of Colored People (NAACP). Attending NAACP meetings “gave middle class blacks an opportunity to socialize and provided a convenient forum in which black professionals could advertise their services to prospective clients” (Chong 1991: 32).

Many selective incentives involve social ties, reputation, and approbation or disapprobation rather than direct material benefits. People typically want to be well regarded, especially by those they agree with, respect, and are close with. However, these types of reputation mechanisms and corresponding social incentives work better in small groups where individual’s reputations are known than in large groups. A polycentric network of small groups can achieve mass action while taking “advantage of the selective incentives provided by social pressures” (Chong 1991: 35). Social movements therefore tend to involve “the confederation of smaller organized units” (Chong 1991: 36). For instance, “the civil rights movement in the South relied heavily on the ability of black church leaders to mobilize their congregations to contribute to organizational activities, participate in economic boycotts, join in public rallies and meetings, and the like” (Chong 1991: 36). In addition to working with churches, civil rights leaders worked with “college and school groups, unions, and professional and fraternal organizations. Members of these preexisting networks had reputations to protect, respect and affection for each other, and reliable information about the preferences and probable behavior of others” (Chong 1991: 121).

In addition to the role of these preexisting associations, the civil rights movement had a polycentric structure in that there were a variety of civil rights groups, such as the NAACP, the Congress on Racial Equality (CORE), and the Student Nonviolent Coordinating Committee (SNCC). Members of each group had repeated interactions with fellow members as well as

others in the movement, which created a reliance on reputation. Perceived cowardice would hurt one's reputation, while bravery and a willingness to sacrifice and take on risks for the cause helped activists' reputation. This helped create incentives to participate in relatively dangerous forms of collective action. For instance, freedom riders in 1961 faced severe violence, as "mobs in South Carolina and Alabama smashed, burned, and bombed their buses and viciously beat the freedom riders, leaving one elderly white activist with permanent brain damage" (Chong 1991: 56). Given the risks, James Farmer, one of CORE's leaders, understandably did not want to come along with the freedom riders as they continued their journey into Mississippi. When he told the freedom riders to "have a safe trip," one of them asked him whether he was coming along and was unconvinced by the excuses he offered for staying at the CORE office instead. As a result, "Farmer realized that he would never be able to face himself or his friends and colleagues in the movement if he bailed out on a pretext and then something terrible happened to the freedom riders" (Chong 1991: 57).

To preserve his reputation, Farmer endured a risky journey that contributed to the collective goals of civil rights activists. This is just one example of how reputation mechanisms could sustain contributions to collective action even when the expected costs to participants was very high. This social pressure required that some initial participants have the courage to take on the initial risks and costs, which then shames other members into joining the costly action. Social entrepreneurs therefore play a key role in initiating the actions and creating the conditions that shame others into participating in risky forms of collective action.

Some goods pursued by civil rights activists had characteristics of "all or nothing" public goods. An "all or nothing" public good requires unanimous participation to be produced (Chong 1991). Individuals who defect from providing an all or nothing public good will often not have a

good to free ride on. Moreover, even if a public good is not strictly all or nothing, perceiving it as such motivates individuals to enforce norms of cooperation. Boycotts are one example of this.

At first, this may seem counterintuitive, as “no single defection in a boycott can destroy the public good for the whole group” (Chong 1991: 18). However, a small number of defections from a boycott can cause a chain reaction that undermines the entire effort:

Limited defections give merchants hope that they can outlast the boycotters, and such optimism on their part reduces their willingness to negotiate. In the absence of negotiations, more boycotters will become unwilling to make sacrifices for a goal that does not appear attainable. These additional defections further inspire the store owners and make them even more reluctant to make concessions, which in turn causes more people to break the boycott, and so on, until the boycott is ultimately destroyed. In light of this scenario, supporters of the movement have a strong incentive to support the boycott and avoid free rides (Chong 1991: 18).

An individual defection could severely harm a boycott effort. This is particularly true in the context of civil rights battles, where a black shopper electing not to boycott is highly observable.

In 1957, African Americans in Tuskegee, Alabama “boycotted white businesses to protest a plan to redraw the town boundaries that would effectively exclude all but a handful of blacks from the voter rolls” (Chong 1991: 19). Activists effectively used reputational selective incentives to guarantee participation. African American shoppers who patronized white-owned businesses in downtown Tuskegee faced social stigma, ridicule, and other informal sanctions. “Black maids whose duties included buying groceries for their white employers began wearing their aprons to the food stores to signal that they were not willingly breaking the boycott” (Norrell 1985: 98, quoted in Chong 1991: 19). White shopkeepers also responded to the visible defections that did occur in a manner that quickly reinforced boycott participation:

Rural blacks who initially broke the Tuskegee boycott delighted white merchants who saw this development as a portent of things to come. One store owner told a reporter he was unconcerned about the boycott because “country nigger customers” still

bought from his business, a remark which promptly caused the withdrawal of their patronage. (Chong 1991: 20)

The boycott was therefore able to sustain mass participation, even in the face of some initial defections. Partially, this was because participants perceived the boycott as an all or nothing public good, which increased incentives to participate and pressure others to participate. The local nature of the boycott also made reputation mechanisms and social pressure more effective, while business owners' offensive responses to observed defections helped drive defectors away from white businesses.

Like boycotts, the maintenance of nonviolence among protesters also has an all or nothing quality in many cases (Chong 1991). One strategic purpose of nonviolence is to provoke police into visibly unjust acts of violence against peaceful protesters. This creates a public relations victory for the movement, which can encourage outsiders to intervene on behalf of the protesters' demands. The police would prefer to avoid giving activists this public relations victory. They therefore prefer to use violence only when protesters have acted in a manner that can be construed as violent. Meanwhile, protesters prefer to avoid acting violently, as their violence can give public relations victories to segregationists. Why then do protests not settle into a stable equilibrium with no violence by either protesters or police? Both sides prefer when the other acts violently, so they act strategically in attempts to provoke the other side. However, the protesters perceive nonviolence as an all or nothing public good, and therefore have strong incentives to maintain discipline and act nonviolently in the face of repression. Once a single protester uses violence, "the police can claim they were provoked by the demonstrators, and this excuses all sorts of mayhem on their part, including attacks on innocent third parties" (Chong 1991: 28). By contrast, the police have both a range of legally accepted forms of violence available to them and even some leeway beyond the scope of the law, which means each

individual officer has weaker incentives to avoid brutalizing protesters. The result was numerous instances where protesters gained serious public relations victories by publicizing police brutality against peaceful protesters.

Throughout the history of the civil rights movement different groups adopted diverse tactics. The movement's polycentric structure allowed experimentation with tactics, as well as the implementation of different tactics in different contexts. Due to concerns about backlash, many black leaders in the 1940s preferred to eschew direct action and focus their efforts on lobbying and litigation. When CORE was founded in the aftermath of World War II, they emphasized direct action, and therefore "had to overcome this bias against more aggressive forms of political participation" (Chong 1991: 99). Since nonviolent direct action was risky and required significant discipline, CORE began as a small organization that carefully vetted any new members.

As a relatively untested and small group, CORE was selective about which battles they pursued. CORE chapters were often formed around a narrow campaign, sometimes disbanding after completing that campaign. For example, Saint Louis's CORE chapter "found itself at an impasse after successfully desegregating downtown dining facilities in that city" (Chong 1991: 100). CORE's members considered addressing employment discrimination after that but believed they lacked the mass support necessary to do so. Over the ensuing decades, groups like CORE experienced significant growth as nonviolent direct action campaigns were successful, demonstrating their viability to more prospective leaders and participants.

While non-violent direct action played a core strategic role in the civil rights movement, some groups also chose to engage in armed self-defense (Hill 2004; Umoja 2013; Cobb 2015). Non-violent direct action may even have depended on armed self-defense that protected activists

from white supremacist intimidation and terror. Umoja (2013: 2) “argues that without armed resistance, primarily organized by local people, the National Association for the Advancement of Colored People (NAACP), the Congress of Racial Equality (CORE), and the Student Nonviolent Coordinating Committee (SNCC) activists would not have been able to organize in Mississippi.” In addition to laying the groundwork for nonviolent direct action, armed self-defense served as a complement to nonviolent direct action from 1961 to 1964, with some activists beginning to treat armed resistance as a substitute for nonviolent direct action beginning around 1965. Local African Americans organized this armed self-defense consistently, applying their own local knowledge to provide defense that the formal legal system would not. Initially, armed self-defense was organized informally, with more formal hierarchical groups being introduced later.

To engage in armed self-defense, African Americans in Mississippi often needed to defy the law. Even relatively prominent figures were denied the right to bear arms. Consider, for example, T.R.M. Howard, a prominent black surgeon, businessman, community leader, and civil rights activist. Sheriffs refused to grant him a permit to own a firearm. Howard evaded this prohibition using “a secret compartment in his car where he could stow his gun if the police pulled him over” (Beito and Beito 2018: 115).

Armed self-defense was crucial to the Mississippi black freedom struggle, but it played a key role in other states too. The Deacons for Defense and Justice, a group that practiced armed self-defense openly, was formed in Louisiana in 1964. They faced off against the Ku Klux Klan and other white supremacists throughout Louisiana and Mississippi, and by “the summer of 1965 the Deacons for Defense had developed chapters throughout the South” (Hill 2004: 3). The Deacons’ defensive activities had an impressive scope:

By the end of 1966, the Deacons had grown to twenty-one chapters with several hundred members concentrated in Louisiana and Mississippi. The Deacons guarded marches, patrolled the black community to ward off night riders, engaged in shoot-outs with Klansmen, and even defied local police in armed confrontations. When the U.S. Justice Department faltered in enforcing the Civil Rights Act, the Deacons' militant politics and armed actions forced a pivotal showdown in Bogalusa between the government and southern segregationists. (Hill 2004: 2)

Armed self-defense had operated in the background of nonviolent protest efforts. Even Martin Luther King, Jr.'s home had a supply of weapons that one visitor called an "arsenal" (Hill 2004: 2). However, the Deacons' open approach to armed confrontation was very different from the strategic nonviolence espoused by other factions of the civil rights movement. One feature of the movement's polycentric structure was that entrepreneurs could establish organizations with very different strategies. Many groups embraced nonviolence as a key part of their public relations strategy. The Deacons made open, public, and defiant armed self-defense a key part of how they asserted their equal standing and defended their community.

An additional advantage of the movement's polycentric structure is that there was no single point of failure. Within a monocentric hierarchy, taking over or destroying the leader or the main seat of power can mean defeating or coopting the entire hierarchy. This type of defeat would be a serious risk given the types of threats civil rights activists faced. Numerous forces mobilized against the civil rights movement, using violence, assassination, intimidation, surveillance, and infiltration to try to destroy the movement. For instance, NAACP field secretary Medgar Evers was shot in front of his house by a white supremacist on June 12, 1963 (Hoerl 2008). Martin Luther King, Jr. was assassinated on April 4, 1968 in Memphis, Tennessee (Long et al. 2019). In addition to these acts of murder by white supremacists, civil rights activists faced persistent surveillance, infiltration, and harassment by federal agents. The FBI's counterintelligence program, or COINTELPRO, targeted a range of groups and individuals,

including civil rights and black liberation groups. Civil rights groups were labeled “black hate” groups to justify these actions. Going beyond mere surveillance, COINTELPRO included serious harassment, including efforts to blackmail the late Martin Luther King, Jr. into suicide. (Gibbons 2019). The movement’s polycentric structure made the movement more resilient in the face of these attacks, as destroying an individual or organization was not enough to destroy the entire movement.

The civil rights movement had a polycentric structure. This enabled entrepreneurship, made the movement robust against ongoing attacks, and helped activists align incentives to promote collective action. The civil rights movement was able to change federal, state, and local laws, desegregate numerous public and private establishments, and fend off white supremacist violence. It is an illustrative example of how individuals can come together to engage in collective action and provide defense within a polycentric system.

We could draw on Scott Shackleford of the Ostrom Workshop, as well as the big literature on cybersecurity and the private sector. The R Street Institute has a bunch of good stuff on the role of the private sector in cybersecurity, especially cyberattack insurance.

3.3 Nonviolent Resistance in the Iranian Revolution of 1979

After the 1953 Iranian coup d’état, covertly supported by the CIA and MI6, the democratically elected Prime Minister Mohammad Mosaddegh, who had nationalized Iran’s oil fields and taken control of the armed forces, was arrested. A new monarchical government headed by Shah Pahlavi, with an explicit agenda to modernize and “Westernize” Iran as well as limit the role of religious clergy, was installed. The Shah’s regime was known for its rampant corruption and repression of political activists, intellectuals,

clergymen, and independent newspapers (Harney 1998, 37–167; Mackey 1998, 236, 260). It eventually established a single party (Rastakhiz Party) and forced all Iranian adults to belong to it and pay its dues. The regime also infamously used its powerful security apparatus and secret intelligence agency (SAVAK) to suppress dissent. The regime's repressive authoritarianism and prevalent corruption lead to several waves of revolutionary resistance, violent and nonviolent. What extraordinary about the Iranian Revolution is the failure of the violent monocentric Marxist attempts at a coup against the Shah and the success of the polycentric nonviolent movement that united factions from different ideological camps and utilized the decentralized religious and economic networks. In the following, I will only focus on the successful polycentric case.

Several factors facilitated escaping the collective action problem and launching anti-regime mobilization. First, collective action would yield high marginal returns to Iranians, including being able to liberate themselves from rules violating deeply held religious beliefs with potential consequences for their eternal salvation, like the ban on Hijab in public spaces, and laws limiting religious liberty. Second, collective action against the Shah happened over a longer time horizon, permitting strategic innovation and learning. The game only ends when the Shah is deposed.

However, the primary solution to the collective action problem was that communication across large populations was smooth due to two major political circuits: the more organized "Society of Qom Seminary Instructors and the Society of Struggling Religious Scholars" (Society of Qom) and the less organized labor circuits. The two aforementioned circuits can be accurately described as circuits due to their exclusive and interiorly well-organized nature, as well as sharing a set of rules and a common language. The former circuit is more organized since it shared a single coherent network and shared language and mental models offered by the seminaries. These political circuits are distinctively polycentric as they are made up of multiple units of decision-making cooperating for a common end of a new government with diverse interpretations of what it should look like. Iranian nonviolent actionists used the political circuits for effective communication and expectations management of positions in

government after the revolution. Opposition to the Shah grew rapidly due to the high number of urban centers in Iran, where clergymen and their students in the Society of Qom and laborers, professionals, and urban poor in the labor circuits interacted and collaborated for mass mobilization (Farhi 1990, 65–73; Gugler 1982).

In the early 1970s, Iran was home to over 9000 mosques that were connected by clerical leaders in every urban center, town, and village. These mosques “constituted a massive institutional network, perhaps the largest civil organization in the country” (Kurzman 2004, 38). The holy status of mosques as houses of God operated as sanctuaries for actionists and were infrastructure for many nonviolent strategies like the distribution of revolutionary content, e.g., audio cassette tapes featuring specific instructions for the movement recorded by Khomeini from Najaf, Iraq, and Paris, France. The connectedness of the mosque network permitted revolutionary leaders in the Society of Qom circuit to pressure clerics who did not explicitly support the revolutionary cause into doing so. It also permitted committed and emerging revolutionary scholars and leaders to secure positions in the post-Shah regime government.

The Society of Qom is responsible for setting the precedent of the most effective ritual strategy for the success of the Iranian Revolution: the Arba’een Procession Cycle. Arba’een Processions are public mourning processions in remembrance and mourning of the dead forty days after their death. The Society of Qom utilized the Arba’een processions as a method of leveraging the regime’s brutality as a method of recruitment. Whenever the regime would kill protestors or actionists, they would organize Arba’een processions for them. As the regime killed more actionists, the number of protestors continued to increase exponentially leading to a cycle called “doing the forty-forty” (Kurzman 2004, 50). Moreover, other annual religious commemorations practiced by most Iranians like Ramadan and Ashuraa’ were used to mobilize people into becoming anti-Shah protesters.

The pervasive influence of the clergy influenced even labor circuits, prompting them to engage in strikes that disabled the Iranian economy. As the number of protestors in the Arba’een grew, and support

for revolution appeared more popular, strikers in the labor circuits began to demand political turnover, abolition of SAVAK, and the return of Khomeini. On January 7, 1978, revolutionary seminary students, members of the Society of Qom, gained the support of ayatollahs to organize a daylong strike in collaboration with merchants in Bazaars. On January 9, the strike closed down the bazaars and seminary students were joined by thousands of protestors pressuring religious leaders to express public support. By late 1978, Labor circuits in bazaars, the oil industry, and even government agencies organized general strikes that shut the Iranian economy and brought it to a standstill.

Another solution to the collective action problem in the Iranian Revolution is the formation of an effective hierarchy in the form of competent leadership. Leaderless social movements face serious challenges as they have difficulty negotiating with opponents. They also have difficulty negotiating relationship boundaries and rules of cooperation with other organizations. Additionally, they face difficulties managing PR crises, especially in distinguishing themselves from deviance from the rules of revolutionary action, as government supporters have an incentive to instigate fringe violence. The Society of Qom and its mosque network offered an effective hierarchy that facilitated setting rules for revolutionary action, negotiation with regime representatives, and communication with supporters and other organizations.

The clear leadership structure in the Society of Qom and mosque networks consistently stressed the importance of committing to nonviolent resistance when regime security forces engaged in extreme violent repression. It even stressed the importance of fraternizing with security forces and avoiding antagonizing them in order to prompt defection and mutiny. The leadership structure allowed making precise demands in negotiation with the Shah regime. The precise demands are most obvious in the case of the clerical leadership's "fourteen-point resolution" demanding the release of political prisoners, return of Khomeini from exile, reopening of religious and educational institutions, free speech, uplifting the Hijab ban, among other things (Kurzman 2004, 28). Finally, the clear leadership structure allowed the Society of Qom and mosque networks to select a charismatic representative for the entire movement:

Khomeini. Strategic leadership was essential to avoid divisions in the ranks of the diverse anti-Shah regime movements, which include Islamists, liberal oppositionists, leftists, and laymen who hold any combination of these views. Khomeini's strategy was to call for an Islamic government but never expand on the implications in detail during discussions and interviews, though they were clear in his writings read primarily by intellectuals. The ideological ambiguity that characterized the Iranian Revolution was a strategic effort to unite the diverse Iranian population to fight under anti-Shah and anti-imperialist banner (Burns 1996, 375). It is also worth mentioning that hierarchies offered selective incentives to seek recognition and contribute to the public good of the movement since achieving higher positions in the revolutionary hierarchy on many occasions corresponds to achieving higher status post-revolution, whether in government or mosque and seminary networks.

As a result of the nonviolent movement's ability to administer selective incentives and overcome the collective action, the Iranian revolutionaries, after several cycles of processions and general strikes, were successful in ousting the Shah regime and installing an Islamic republic in its place. The success of the nonviolent movement is significant because the violent attempts to oust the Shah through guerrilla warfare failed miserably and were unable to attract people from diverse perspectives. The nonviolent Iranian struggle was successful for the opposite reason: it was able to accommodate the clash of human purposes by forming a polycentric structure with a variety of leaders (Islamists, liberal oppositionists, and leftists) who communicate through organized networks and across circuits. The consistent application of political and economic pressure by Iranian clerics, intellectuals, laborers, students, in the face of brutal repression, stripped the Shah regime from the pillars of its support. It ultimately neutralized its security apparatus and completed the deposition of the Shah when the Iranian Armed Forces Joint Staff declared that the Iranian military will remain neutral in disputes between the Iranian revolutionaries and the Shah regime on February 11, 1979.

4. Conclusion

Mainline economists have a special appreciation for the complex and dynamic nature of social scientific phenomena and emphasize invisible-hand theorizing to analyze how persons in large-scale societies coordinate their plans in orderly fashions. Due to the profound complexity of social scientific phenomena, as summed up by Hayek's *Theory of Complex Phenomena* (1967: 22-42), attempting to create a simple theory for phenomena that are by their nature complex leads to false conclusions. Hayek adds: "at least without a specified ceteris paribus assumption, after the full statement of which the theory would no longer be simple." It is due to the impossibility of complete ceteris paribus in economics that it fails as a tool for social engineering. However, it can potentially succeed as a tool for understanding the institutional arrangements that bring about peace and freedom of inquiry that unlock the doors to economic prosperity. The potential of economics to study institutional arrangements explains the obsession that mainline economists have had with rules, starting from Smith to Ostrom.

Comparatively, mainstream economists "tend to follow the scientific trends of their days and, at times, to be taken far afield from the mainline of economics by the pursuit of current fashions" (Boettke et al. 2012). In some periods, there may be an overlap between the mainstream and the mainline. However, since the 1960s, mainstream economics has deviated significantly from the foundational propositions that motivate the mainline. Economics became a science of choice, allocation, and social control, and the complexity of economic phenomena was largely completely ignored.

The mainstream approach today has many problems. Rather than focusing on the rich institutional arrangements in human societies across history, the way Adam Smith to Kenneth Boulding did, mainstream economists tend to disregard the complexity to shoehorn reality into their mathematical models. Mathematic and econometric models, which fuel the mainstream of economics today but are actually more suitable for simple phenomena, may mislead us. They mislead us by disregarding the complexity of the world unless they are clearly contextualized, and their limits are explicitly

acknowledged. It is incorrect to say that the scientific method of ascertaining patterns and regularities has been discovered and established in physics, and therefore it is more *advanced*. On the contrary, the only reason the laws of physics (regularities and patterns) have been discovered is that their laws are simple(r). Attempting to create a simple theory for phenomena that are by their nature complex leads to false conclusions. Hayek (1967) adds: “at least without a specified *ceteris paribus* assumption, after the full statement of which the theory would no longer be simple.” The simplification of social scientific phenomena encourages the role of economists as engineers of “plumbers,” the latter being precisely the role that Duflo (2017) wants economists to assume.

With regards to the future of social science research, Ostrom and Duflo agree that mainstream theory needs to be changed and fails to explain many realities. They also agree that we must learn from our observations in expanding theory. However, they differ regarding how to amend the mainstream. Ostrom sees mainstream theory on common goods management to be totally incapable of explaining many real-life instances of successful cooperation that her fieldwork uncovered. Ostrom’s Law famously states that “a resource arrangement that works in practice can work in theory.” And she also famously said: “[t]he power of a theory is exactly proportional to the diversity of situations it can explain.” Much of my work with Christopher Coyne and Nathan Goodman is an expansion of Ostrom's work, applied to the provision of defense by institutions that can't be categorized as central coercive institutions. Mainstream economic theory, building from Paul Samuelson (1954), claims that the provision of public goods without a central coercive institution is impossible. We seek to illustrate many cases where it was possible and provide a theory powerful enough to explain polycentric defense.

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