

Economic Processes and Network Dynamics in the Pashtun Tribes*

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The argument of this paper is that the largest tribal system in the world, the Pashtuns, has emerged a specialized complex system of division of labor based on land ownership and patrilineal genealogy that allows for trade and accumulation of wealth in the absence of currency and institutions of financial intermediation. Under this tribal system, the unwritten contractual agreements of exchange override the patrilineal genealogy in the situations where this one becomes inefficient and are reinforced by an emergent rule of law, Pashtunwali. The market processes and the social networks dynamics of the Pashtun tribes are described by an agent based model.

Key words: Pashtun, Pashtunwali, agent based model, land ownership

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Introduction – Why study the Pashtuns?

The Pashtun or Pukhtun tribal society is mostly spread among the territories of Afghanistan and Pakistan and in the FATA and PATA areas. The Pashtuns are the largest tribal society in the world (Kyberwatch, 2006), a total population estimated to be at 42 million people spread around the globe – there are Pashtuns in India, Middle East, USA, Europe, Australia, etc. There are estimated around 60 Pashtun tribes and approximately 400 sub-clans worldwide.

The tribes are patrilineal, meaning that a Pashtun is recognized as a Pashtun not by the same language or similar culture, but by patrilineal descent: if one has a Pashtun father then he is a Pashtun; they may speak Pashto, Urdu, Persian or English. The emphasis on the patrilineal identity is based on the most important code of law and conduct of the tribal society, the Pashtunwali, often referred to as the “Code of Honor”.

The intricate system of tribes is an institution specific for the Pashtun society (Wardak, 2009). There are several layers of organization, that are based spatially (geographically), by kinship structure (family) and by occupation (castes). All layers of organization are transmitted in a patrilineal fashion. This institutional framework is highly specialized and functions efficiently without the use of any currency:

“Currency is however unnecessary for the smooth functioning of the highly developed system of division of labour and production in Swat. The units exchanged in the economic system are not goods but services; and the economic activities in the villages are organized in a complex system of interlocking mutual services and/or compensations in kind.” (Barth, 1965)

Recently, there has been introduced the Pakistani rupee into some of the tribal trade due to the exchanges between the tribes and the outside world, but the introduction of money has not changed the nature of the principal-agent relationships between the landowner and the contracted parties or the nature of exchange relationships through barter and services between the castes.

The aim of this paper and of the subsequent agent based model is to answer the question of how does this tribal society function in the absence of central governance and currency and

what specific economic processes and network behaviors have emerged in order to adapt to the aforementioned conditions.

Self-adaptive features of the system of division of labor

The spatial relationships are somewhat different from those of the patrilineal descent. They are associations of neighborhood units, often made up of all the permanent residents of a ward. It is multi-caste in membership, and thus unites persons that are not necessarily related by kinship ties of any kind (Barth, 1965). Although the association is not a kinship structure, it is transmitted patrilineally. People who move out of the wards, who settle in a neighborhood other than that in which he grew up, for instance due to a new employment with a new landowner, will tend to remain members of the association of their original community, of the original ward.

The basic kinship structure is the khel, which means “son of” and is central for the family of a certain descent, as a principle for status and rights. But the organization of the Pashtun society is not exclusively, or even predominantly, based on that principle. Most statuses and rights are usually defined by contractual agreements between persons. Beyond determining the caste membership, the patrilineal descent has its main importance through the relationship that exists between the descent groups of landowners and the territorial organization.

The castes do not form spatial associations or communities (geographically). They are primarily hereditary occupational categories, and thus inter-dependent economically (Barth, 1965). They constitute the division of labor by patrilineal descent. But the cast structure is a consequence of the economic organization of the division of labor. Where there are discrepancies between the occupational structure required in a local community and its caste division, the discrepancies between inherited caste and actual occupation arise. In such situations, the occupations not filled by members of the appropriate castes are taken up by individuals of those castes that are too numerous (Barth, 1965). Thus, the system of castes displays self-adaptive behavior according to the labor demands of the tribe.

But the idea of self-sufficiency of the Pashtun tribes is not equivalent with the one of a closed system. On the contrary, after the British Empire influences, different foreign currencies

have flooded the FATA area, particularly punds and Pakistani rupees. Also, the emergent markets of the bazaars and of different kinds of brokers between the Pashtuni hawaladars and the foreign banks established in Pakistan show that there is an ongoing trade and exchange of goods between the local population and the outside world.

The Economic Processes of the Tribal Economy

The most important resource for this tribal society is land. Everything is organized around land ownership. The landowners are one of the highest-esteemed castes and they are the richest people from the tribes. Being a Pashtun is in a sense synonymous with being a landowner. The caste of Pakhtun – or the landowners, in translation – is higher than even the caste of the priests and it is overcome in hierarchy only by the caste of Saints. Only the castes of Pakhtuns and Saints maintain a wide range organization. But the statuses and rights from castes are defined contractually, not patrilineally. Patrilineal descent, as mentioned above, functions as a first order relationship for the division of labor. The castes limit only the range of positions for a man to aspire to, otherwise, they are free to choose their profession and tribe. And there can be labor turnover within the system of castes and of patrilineal kin once there is an increasing demand for a certain service and shortage of labor supply. This was the example of the herders turned into muleteers.

In Pashtunwali, *Zemaka* (land/earth) is one of the primary codes, meaning that a Pashtun must defend his land/property from incursions wherever he or she might live. The importance of land for the division of labor and contractual agreements is crucial in this society; land is a form of exchange currency and thus a cause, an incentive for migrations, not cause for settlements. The tribes are in constant search for new land; once appropriated, the land becomes a club good (Buchanan, 1965) that is rotated among the landowners of the tribes through the so-called *wesh system*. The *wesh system* represents the rotation of the land every 10 years, as the initial land has specific different ecologies and thus some landowners might receive a higher comparative advantage.

The shares of land are called *bakhra* and they have the same value as a currency; the land owner literally gives *bakhras* for a year to the tenants; according to the quality of the land, it can

be larger or smaller, but the purpose is that one person who owns 2 bakhras to get twice the crops of a person who owns just one.

As land is appropriated from a public good into a club good by the migratory tribes, it is reasonable to say that land as a cause and incentive for migrations. According to the choice theory of investment, the “processes that take more time will evidently not be adopted unless they yield a greater return than those that take less time” (Hayek, 1941). Thus, although generally believed that settled populations have more economic growth than the nomadic ones, the migrations of the Pashtuni show that the value of land is relatively higher on the long term than any other good that might be used for barter exchanges or that is used by other tribes around the world.

As this population is mostly illiterate, the contracts are not written documents, neither are concluded in front of witnesses. Any type of agreement between two or more partners willing to cooperate takes the form of a Pasthun contract. In cases of conflicts and feuds, the case is brought for settlement in front of the Jirga council (council of the elderly) and is judged by the Pashtunwali code of law. Thus, land is the most important cause for disputes, but also for settlements. The bargaining for the land ownership is a clear example of Coasian bargaining with the lowest transaction costs (Coase, 1960). The Jirga council meets only when there is a dispute and decides the exact allotment of land.

Mutual relations of service and/or compensation are organized through a series of such unwritten individual contracts, and the economic system is best described in terms of these specific relations. These relations are of the principal-agent type between the landowner and the workers on his land and of barter between the others.

The more important of them fall into six main categories, to be described in the following order:

- (a) land tenancy and agricultural labor contracts,
- (b) service exchange relations between agriculturalists and specialists who supply tools, transport etc.,
- (c) barter relations between craftsmen and the private buyers or consumers,

(d) service exchange relations between performers of various personal services and their clientele,

(e) principal-agent relations between a master and his private servant,

(f) principal-agent relations between the land-owner and his staff.

There are four types of contract, the holders of which are termed respectively:

(i) *ijaragar* —‘rent-companion’, who pays a rent per specific period, based on an estimate of the net productivity of the land. He assumes all risks on the crop, is free to organize cultivation and to sub-let at his own discretion. The rent is usually paid in kind. (Barth, 1965)

(ii) *brakha-khor* —‘sister-of-the-plot’. This type of tenant supplies seed, tools and draught animals, though usually not manure, and in return receives an agreed share of the crop. The share varies somewhat between localities in relation to the average productivity of the land; in the hilly areas such tenants receive three fifths (Parona) to a third (Nalkot); on fertile land the usual share is a quarter (Biha, Worejo, Babuzai). Shares are invariably paid in kind. The tenant may be expelled from the land at the owner's convenience as soon as the harvest is finished. There are traditional rules defining the rights of entry of the succeeding tenant before the crop has been harvested, such as his right to seed clover in the ripening rice fields. (Barth, 1965)

(iii) *dehqan* —agricultural labourer, who is supplied by the landowner with a plot of land, tools, seed and animals. In return for his efforts, the labourer receives a fifth of the gross crop. Like the tenant, he can acquire no rights in the land, no matter how long the landowner may have chosen to assign the same plot to him. (Barth, 1965)

(iv) *faqir* - this word is a wider term for dependant, but has the specific meaning of a poor man who works on the infertile, unirrigated marginal land of a landowner, and pays for this right in labour, or occasionally in clarified butter. Such a person is often called a ‘servant’ (*naukar*). These crofters usually occupy separate hamlets or villages in the hills or mountain areas (*sarkəli* = villages above or away; *bana* = hill settlement). The occupation rights over particular fields tend to be inherited. The amount of service to be given is rarely stipulated, and depends upon the needs, and the coercive powers, of the landowner. It usually includes the obligation to husk the total maize crop of the landowner. (Barth, 1965)

The organization of agriculture around the land ownership is usually a principal-agent type between the landowner and the tenants. The exchanges between different lower castes, that are specialized in different crafts, takes the form of exchange of services. Thus, the land ownership takes the form of a node with a high degree of centrality within a cluster represented by a ward.

Agricultural production requires more than land and agricultural labor; a group of subsidiary specialists are necessary to produce tools and keep them in good repair, and to provide for the transportation of the crop. In the solution of these technical problems, the occupational aspects of the caste system are used, and a complex set of relationships develops between the different producers. A single productive unit (cluster) around a landowner comprises as a minimum, landowner, tenant or laborer, carpenter, blacksmith, rope- and thong-maker and muleteer. The ties between any person and his supporting specialists are direct and bi-directional, so that the toolmakers respond directly to the specific requirements of other members of the productive unit. There are no intermediary agents, no shops and no storage of finished goods for eventual use by others. Payment of all members of the unit is also deferred until the whole productive cycle is completed, and is generally an agreed proportion of the total product.

The landowner holds the pivotal position in this system (centrality). It is through their contracts with him that the other persons become agents in the cluster, and it is from him that the ultimate profits or reimbursements flow, without printing or using any type of currency.

A craftsman specialist, for example a carpenter, makes a contract with a landowner or a group of landowners by which he commits himself to produce and maintain all implements or parts of implements traditionally made by carpenters which are required to maintain the agricultural production of the fields which his employers own. These fields are actually being farmed by tenants or laborers; it is their specific needs which the carpenter in fact supplies. Thus, when a plough is jammed between big stones and broken—whether it belongs to a tenant or landowner—it is taken to the carpenter and he is required to repair it. A similar contract exists with a smith, a rope- and thong-maker, and a muleteer who is responsible for transporting the crop to the appropriate storehouses. Although these services are not directly reciprocal (except between carpenter and blacksmith), the partners in the unit make no payments of any kind to each other. The tenant does not pay the carpenter to repair his plough, the muleteer claims

nothing from the tenant for transporting the seed, and gives nothing to the blacksmith for having the mules shod.

Most pastoral production is devoted to the local consumption of dairy products; however, surplus milk, which is immediately converted into yogurt and secondary yogurt products such as clarified butter (roghan-ezard), buttermilk (dugh), and dehydrated buttermilk (qrut), as well as animal hides, wool, goat-hair tent strips, and live animals (especially young males) are used for market exchange or direct trade for wheat, fodder, carpets, and tent-poles. Money obtained from market transactions is used for animal purchases, bride-price payments, grazing land rentals and (rare) land purchases, and for commodity purchases of tea, rice, sugar, salt, cooking ware, cloth and finished clothing, watches, radios, fuel, etc.

The manner of payment—except to tenant and laborer—may vary considerably from this type. In Madyan, a group of landowners may allot fields to blacksmiths and carpenters in return for their services. Elsewhere they are paid a specified weight of grain, of the order of 100 to 300 pounds, for every pair of bullocks working on the fields they have served. Not uncommonly, the smith or carpenter is given charge of a water-powered mill—which he must then man and keep in repair—in payment for his general services to the persons using it. He then collects the traditional one-twentieth share of all flour ground in the mill, which compensates him both for his work on the farm tools, and for his work in grinding the flour (Nalkot, Worejo). The muleteer may sometimes receive, instead of a fixed share of the crop, an agreed quantity of grain per load transported. These various ways of arranging payment are regarded as alternative and essentially equivalent.

As an essentially non-monetary system, the Pashtun tribal system does not permit any considerable capital accumulation in other forms than in land. Rights in land are, however, essentially limited to members of locally dominant castes of the Pashtuns. The great majority of economic relationships take the form of principal-agent or rental contracts of relatively long duration, in which payments are deferred or left outstanding in the form of claims on third persons. Once they settle after migrating from another area, in the main productive occupation, agriculture, the landowner has the pivotal position as the coordinator of the many specialists engaged in production, and only through him do the partners in the enterprise receive their final shares in the product.

This is not redistribution, but reciprocal relationships of mutual exchange; land is club good that is shared by rotation through the wesh system; but in the Pashtuni society the property rights on the land are well defined and conflicts usually arise on passing property from within the kinship network when there is not a direct patrilineal descent (not from father to son, but from cousin to cousin for instance). The enforcement of the contracts is done exclusively through Pashtunwali. The wesh system essentially functions *ex ante* as a self-adaptive economic process against monopoly. By this rotation, each landowner has his turn on the ecological advantages or disadvantages provided by the specific geographical and agricultural features of the land owned by the tribe.

Network Dynamics in the Tribal Economy

Wealth and capital accumulation in the form of land are also causes for network evolution in the traditional patrilineal and caste structures. The caste of land-owners is in fact a small-worlds network that displays self-adaptive features and dynamics according to both the evolving division of labor and to the geographical migration. People can change castes or villages, thus there is network evolution on the remote nodes according to the labor demands of the tribes. On the other hand, the land-owners can also change their ties with other land-owners wither though the wesh system either through spatial migration. The people within a land-cluster also have kin or caste-type ties outside a ward.

The criterion of wealth based on land serves to reinforce and supersede the network ranking based on other criteria, such as castes and kinship. The more autonomous castes include the Priests, who farm or administer dedicated lands, some Farmers, who themselves own a bit of land, Goldsmiths, who have their own capital and engage on piecework only, and Shopkeepers, who do independent business on a cash or barter basis. The other castes, on the other hand, whether tenants, laborers or craftsmen, are subject to principal-agent relationships.

Dancers, although one of the lowest castes, may accumulate a fair amount of wealth, particularly in the form of pretty clothes, even though they belong in the lowest, polluted, group; on the other hand, the Saints cannot compete with the Pashtuns in wealth even though they claim

the highest 'ritual' status. Thus, the Pashtuns remain the central nodes within the wealth ties of the tribal network.

Another type of wealth edge within the network, with a higher evolutionary dynamics, is the business partnership. Land-owners will sometimes join together in order to pool their resources and spread the risk of a new cluster. However, these partnerships are rarely successful due to mistrust among the partners. As self-sufficient small-worlds, the land-centered clusters will rarely collide into a network without any centrality.

Another network-altering mode of exchange among the Pashtuni men is the barter, or adal-badal (give and take). Men are always on the alert for the possibility of bartering one of their possessions for something better. This is more often seen for the exchanges with the outside world or with products brought in from the outside world. Often the exchange is like for like: a radio for a radio, sunglasses for sunglasses, a watch for a watch. However, unlike objects can also be exchanged, such as, in one instance, a bicycle for two donkeys. Adal-badal is always practiced with nonrelatives, and thus the initial kinship network increases in density. A good exchange, in which a man feels he has gotten the better of the deal, is cause for bragging and pride (Barth, 1965) and reputation is a very efficient mechanism of re-enforcing the wealth edges of the tribal network.

Aside from barter, there is also gift-giving to outsiders. This type of gift is called swori or charity. Under this type of edges evolution come such actions as lending cattle to a man for plowing without expecting any return. While adal-badal is morally neutral, since each man is trying to outwit the other, swori has moral connotations. A man who gives without return is said to be "loved by Allah," while the man who receives without giving is "disliked by Allah." Swori resembles the giving of gherat (feasts and food for the poor) and zakat (pious charity). In all these cases, the giver is regarded as morally superior to the taker. This is true in every situation, with two important exceptions: the guest and the holy man. Again, in the gift-giving situation, the tribal network creates new edges with the outside world or re-enforces the wealth edges of the existing extended kinship structure.

Besides wealth, another cause for network evolution is the demographics of the tribes. The kinship ties change with the death and birth of the people, as well as through the institution

of marriage. The kinship ties form the basis of the agent-based simulation from the bottom-up of the tribal economy.

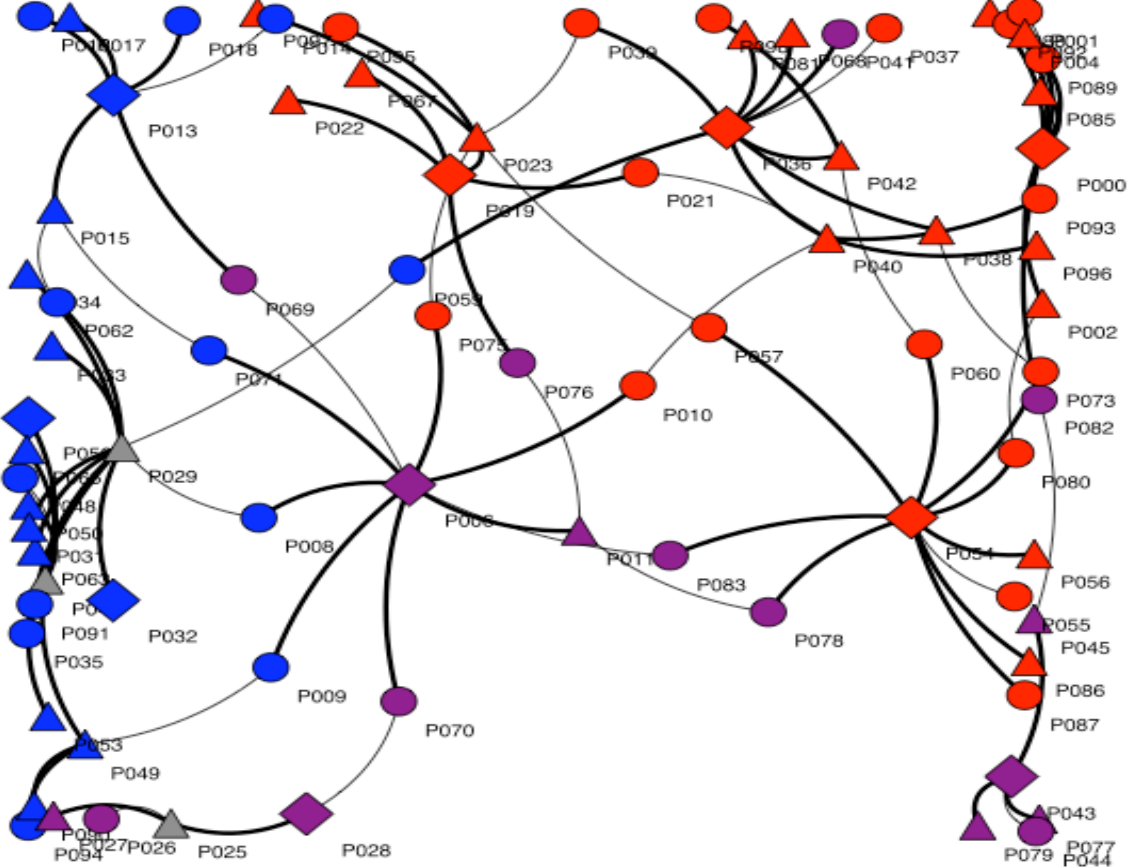


Figure 1. The visualization of the kinship ties in the Pashtun tribes (courtesy Baseera team)

Pashtunwali as a complex adaptive system of law

“Pashtunwali is a set of norms and customs that ensure the group's survival as a distinct socio-cultural entity” (Spain,...). There are no state institutions to ensure the implementation of this unwritten code of life but the Pashtun members of the society internalize these social norms. Pashtunwali does not arise from one authority, temporary or divine, and is, therefore, open to debate and re-interpretation according to the needs of the tribal society and the changing times. Pashtunwali is a complex adaptive system of the laws.

Pashtunwali dates back as 2000-3000 BC and is still practiced by all the Pashtuns around the world. Pashtunwali, a complement of the Pashtun society, has undergone various legal, political, economic and cultural changes for its perfection and reform. It has developed into an accepted constitution. (Ahmed, 1980)

The Pakhtun code of conduct is based on equality (Seyal) and applying equality is called Seyali (or competition). Equality, competition, protection of Namus (protection of female members and wealth) and Ezzat (honor) are the centerpieces of Pakhtunwali.

In the Pashtun society, equality and competition are almost synonymous. Competition is the application of equality, meaning that all the Pashtuns have the same rights to competing with one another. This principle is more important than the one of agnatic rivalry (tarboorwali). Competition brings honor (nang) to those that compete in the business trade.

Another core concept in Pashtunwali is the importance of the individual and of individualism of the Pashtun. Thus, there are then two patterns for loans: one is with those who are not one's equals and who therefore have no honor and need not be repaid, the other is with fellow Pashtun who must be repaid or else admitted as one's superiors.

The feuds between the Pashtun people are for land, women and gold. A person wronged is under the inescapable obligation to take revenge (badal), otherwise he is under social censure (peghor). A man who loses his honor must be ostracized and his disgrace would endure for generations. The other guilty party may supply for money or forgiveness through nanawatay: admits his guilt and throws himself at enemy's mercy. Nanawatay may be refused in cases of honor, adultery or rape, but may be accepted in cases of murder, debt, theft or robbery.

Sometimes money is given as part of forgiveness. The feuds and nanawatay are disputed by the council of the elderly, or jirga.

Jirga assembles together only in cases of feuds and most feuds are about inheritance of land between cousins (the agnatic rivalry). The election of the jirga is based on reputation of the most prominent people from different villages and is a type of collective action with unanimous consent. The jirga exists only as long as the dispute exists, the members can be changed from situation to situation. Jirga is just issue related.

In Pashtun customary unwritten law, there are two major types of behavior governing the society: badal (vengeance) and melmastia (hospitality). Badal is a type of tit-for-tat strategy that comprises retaliation and retribution (tawan). The jirga (assembly of the elders) and the ulema (religious clerks), at the request of the supplicant, accompany him to the enemy house and beg for pardon. Another form, chador (scarf) is when a woman in distress sends her veil to a Pathan, calling upon him as her brother. If a person's tribe turns against him, then he leaves and becomes hamsaya in another tribe.

An individual or a tribe of weaker influence are obliged to place themselves under the protection of a powerful patron to secure immunity from injury to a life of dishonor. Hamsaya is land or lamb. In both cases, the right of protection is dumed sacred. A strong protector's protege is also strong. A hamsaya is equally binding upon his master. Melmastia is a guarantee of safe conduct to a stranger, emissary or even enemy passing through the tribe's territory. Hospitality is considered to bring prestige and status.

The disputes are solved within the Pashtunwali, because otherwise, both parties lose the land, for instance, to the government. The one who does not contribute to be cost of the dispute, also does not get the profit. (Miakhel, 2009).

“... the jirga is the product of Pashtun tribal society and operates according to the dictates of Pashtunwali, an inclusive code of conduct guiding all aspects of Pashtun behavior and often superseding the dictates of both Islam and the central government. Thus, in the tribal Pashtun areas, local jirga settles (nearly) all issues, unless assistance is requested from another tribe or government.” (Carter and Connor, 1989:7)

Because of the Pashtuns' expertise in conflict resolutions, as well as due to their large population size and dispersion through much of FATA area, it was not uncommon for a non-Pashtun group to request the local Pashtun elders to hold a Jirga council to settle a non-Pashtun conflict, suggesting that the Pashtun jirga traditionally had more impact than its non-Pashtun counterpart, the shura. In these situations, even non-Pashtuns refer to these processes of conflict resolution as Jirga.

Thus, Pashtunwali is an emergent mechanism for “checks and balances”, punishment and monitoring for enforcing trust and reputation in any type of contractual agreements. Pashtunwali enforces these agreements *ex ante*. As any code of honor, reputational mechanisms have the highest efficiency in monitoring and enforcing the law. They also reduce the social distance (Leeson, 2008).

At a plarina level, the norms of reciprocity are governed by trabgani. Trabgani refers to the established patterns of behavior which guides members about who to cooperate with, who to compete with, who to marry and in a word how to live as tarboor – an equal and respectable member of the kin group.

“Much honor is given to Pashtuns who can successfully arbitrate the feuds that are endemic among them. Fines and blood money are devices frequently used to limit violence among rival families.” (Newell and Newell, 1981).

The rotating Jirga reduces the rent-seeking behavior (Tullock, 1980) that might occur if the tribes give absolute judging power to a handful of people. Thus, instead of acting as the self-interested political actors of the western governance system (Buchanan and Tullock, 1962), the different temporary Jirga councils act as a polycentric system of governance (Ostrom, 1997).

As both Pashtunwali and the Jirgas are “checked” and monitored through *ex ante necessary* reputational mechanisms in the absence of central governance and regulation, the question of sufficiency arises. In the cases when a Pashtun breaches the code of honor, it is also Pashtunwali that has emerged an *ex post sufficient* reputational mechanism for punishment and control. Nanawatay or forgiveness, is a means of re-establishing the balances by setting a market price for the wrong-doing. In cases of theft or breaches of honor, the wrong-doer negotiates a price with the other party, also through the Jirga council. In the cases of nanawatay, the

negotiations are never done directly between the two parties. The Jirga has thus the power to restore the reputation of the wrong-doer and to compensate the other one.

The Agent-Based Model of the Pashtun Society

The simulation is done on a MASON platform, from the bottom-up, starting with the kinship ties. Initially, there are only 10 people in the society and the tribes “grow” artificially by marriage and births.

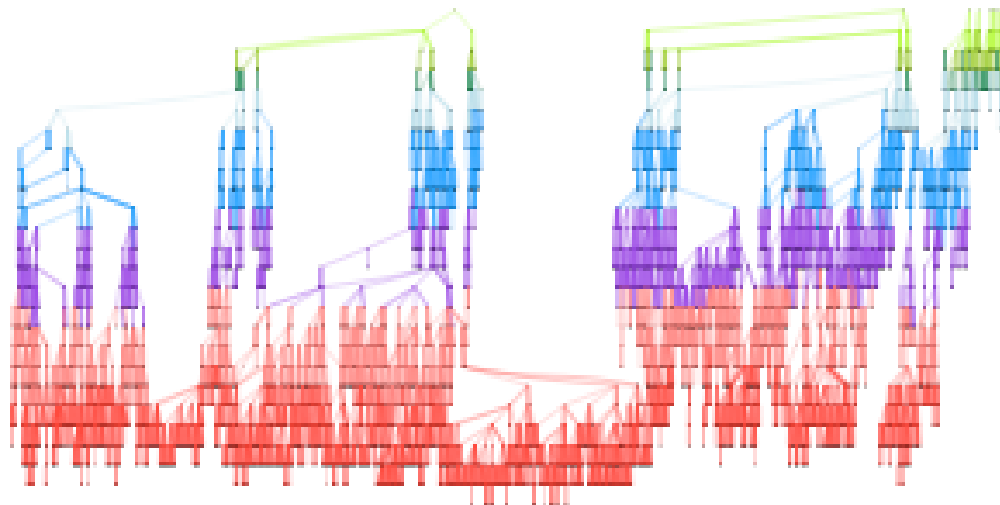


Figure 2. Growing the Pashtun Society from the bottom-up (*courtesy Baseera team*)

Conclusions

The use of agent based modeling to simulate a stateless, currency-less tribal economy gives us new insights into understanding how the economy functions entirely from the bottom-up, without any central governance or regulations. It also gives us a new perspective on how phenomena such as land based division of labor, emergent rules of law and migrations have emerged in time so that the society has self-adapted in time to such interesting economic conditions.

The simulation of the economy within the larger Baseera project will also help understand and visualize the most likely patterns of evolution of the Pasthun tribes in the future.

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