Segregation and Stability

Simulations of the Afghan National Army's stability under the influence of corruption and ethnic tensions

Thomas Rieth (02.04.2014)

The current strategy of the international community in Afghanistan is to train the Afghan security forces to be able to counter the nation-wide insurgency. This strategy, however, hinges on their ability to maintain security within Afghanistan and to preserve internal unity. A lot of "ifs" must be answered positively for the armed security forces, especially the Afghan National Army (ANA), to become an effective force, able to defend the civilian population and the Afghan state. The following is an analysis concerning the stability of the security forces using agent-based modelling (ABM) and system dynamics (SD) simulation. Investigating the volatile structure and the dynamics within the security forces we try to draw attention to what may be in store in the future.

Introduction

The current transition process and the conduction of the presidential election in 2014 require the development of the security sector and the build-up of effective security forces in Afghanistan. Hereby the following problems of the Afghan security forces became visible: lack of cohesion, ethnical imbalance, and fragmentation, as well as corruption and insufficient financial funding. The complexity of the problem space is increased by strong interaction and overlap of these aspects. We use agent-based modelling and simulation, to investigate the stability of the Afghan security forces against corruption and financial underfunding.

The lack of cohesion during build-up of the security forces is characterized by a missing coherence and loyalty to the Afghan state. For example, during the presidential election in 2009 the former president Karzai violated the Afghan constitution in the view of many officers and soldiers of rank and file.[1] Further, the Afghan government have never been able to provide a convincing and unifying narrative of the security forces' tasks and enemies. A diffuse concept of the Taliban enemy is a rather small inhibition threshold for changing the soldiers' loyalty to local power brokers, militia commanders, or warlords.

The main reason for desertion have been the wide-spread corruption of the soldiers' superiors, the insufficient provision of food and equipment, inefficient medical treatment, Taliban intimidating their families, and most problematic perhaps the loss of trust into the capability of the own security forces to defend after the American troop withdrawal.[2] Corrupt superiors rely on stealing of equipment, and often they develop predatory relations to their inferiors by pocketing their pays. [3]

Besides the lack of unifying narratives, the ethnic fragmentation of the Afghan security forces has the effect that many Afghan soldiers' loyalty changes to local power broker along ethnic lines. Before the Soviet occupation the officer corps was mainly build by nationalistic Pashtun officers from the Ghilzai tribe in Eastern Afghanistan.[4] When looking at the current ethnic structures of the Afghan security forces today, one observes that they are dominated by Tajiks.[5] Unfair treatment by superiors of a

[1] Nils Wörmer, "Afghanistan am Scheitelpunkt der Transitionsphase," SWP Aktuell 14, February 2013, p. 2.
[2] Rod Norland, "Turnover Clouds Afghan Military As U.S. Plans Exit," The New York Times, 16 October 2012, p. 1. (Emphasis added.)
[3] International Crisis Group, A Force in Fragments: Reconstituting the Afghan National Army, 12 May 2010, p. 12.
[4] Ahmed Rashid, "Obama must keep his eye on the Afghan exit," Financial Times, 5 October 2010.
[5] International Crisis Group, A Force in Fragments: Reconstituting the Afghan National Army, 12 May 2010, p. 19. See also Antonio Giustozzi, "The Problems of Creating a New Afghan Army and the Critical Dangers of Failure!"

different ethnicity is one of the reasons of the high attrition of the security forces, unauthorized absence, and desertion. Due to the corruption of the superiors soldiers are missing payment, food, and recovery, which is one source for the low cohesion of the security forces.[6] Ethnic tensions inside the ANA caused the creation of two fractions, one that is following Abdul Rahim Wardak (Pashtun, defence minister 2004-2012) and the other General Bismillah Khan Mohammadi (Tajik, chief of staff ANA 2002-2010, defence minister since 2012), and others ethnics did similarly: for example Hazaras led by Lieutenant General Baz Mohammad Jawhari, or Uzbeks behind Lieutenant General Hamayoun Fauzi. [7]

The funding of the armed forces is another issue concerning their cohesion and stability. Although NATO allies are planning a reduction of the ANA from 352.000 to 250.000 in 2015, it is not expected that the contribution of the international sponsors will be sufficient.[8] The monetary share of the Afghan government as well as their fair and appropriate distribution will be a challenge in the future.

Dynamic Aspects of Stability

In this section we will use the method of causal-loop diagrams (CLD) and system dynamics (SD) to gain an understanding of the development of issues and problems of ANA stability in the future.[9] The models describe the structure of a system in form of so-called causal-loop diagrams, where different relevant factors of a system are put into mutual relationships. The system's dynamic behavior is formulated by a set of the differential equations. Based on our key findings and gained insights we created the CLD in Figure 1.

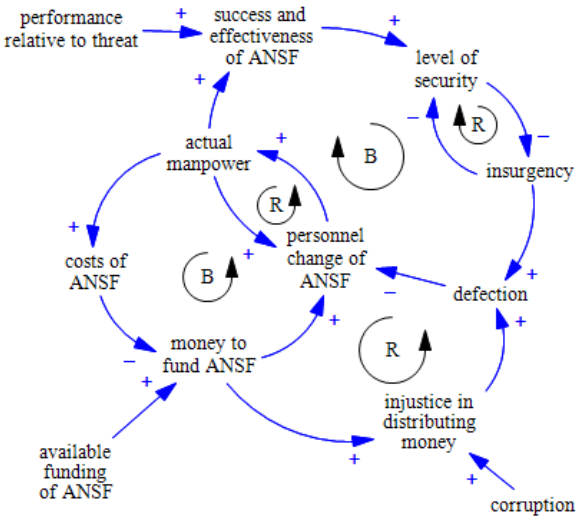

Figure 1: Causal-loop diagram (CLD) of the issues concerning ANSF Stability

International Industrial Information LTD., 2002. Vanda Felbab-Brown, "Afghan National Security Forces: Afghan Corruption and the Development of an Effective Fighting Force," Brookings Institution, 2 August 2012.

[6] Joshua Parlow, "More Afghan soldiers deserting the army, NATO statistics show," The Washington Post, 1 September 2011. Gary Owen, Beans and Bullets: Pentagon report puts ANSF logistical and combat capabilities in doubt, Afghanistan Analysts Network, 26 February 2013.

[7] International Crisis Group, A Force in Fragments: Reconstituting the Afghan National Army, 12 May 2010.

[8] United States Government Accountability Office (GAO), Afghanistan – Key Oversight Issues, GAO-13-218SP, February 2013, p. 22. The Guardian, "US to leave troops in Afghanistan after 2014, says German official," 22 February 2013.

[9] For an introduction and deeper treatment of system dynamics and the formal rules to understand causal-loop and stock-and-flow diagrams see the excellent textbook of John D. Sterman, Business Dynamics – Systems Thinking and Modeling for a Complex World, Irwin McGraw-Hill, 2000 or the Pegasus Systems Thinking homepage http://www.pegasuscom.com/systems-thinking.html (retrieved 11 Oct. 2013)

The argument that a system's dynamic behavior is caused by the endogenous structure of the system in form of an interaction of reinforcing or balancing feedback loops is the main idea of system dynamics. The factors that have been used here to describe the structure of the system using the CLD and the dynamic behavior by the differential equations are on a rather high level of abstraction. Such diffuse concepts play an important role in the creative process of modelling. They arise during the process of clarification and definition of new concepts that are somehow different to existing concepts. At this stage one is usually unable to describe or judge these clearly without ambiguity at the current state. Our focus here is the assessment of the relevance and importance of the interacting feedback processes in the system's structure. Our ambition is to obtain a rather rough estimate of the system's behavior if various external parameters are changed.

In a further modelling step, we developed a stock-and-flow diagram in Figure 2 where the level or state variables were identified in the CLD.

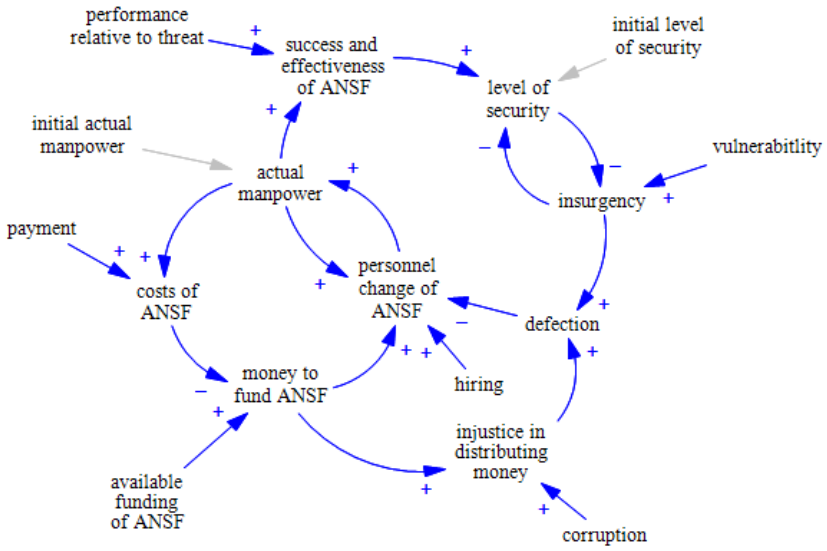

Figure 2: Stock-and-flow diagram based on the CLD in Figure 1

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actual manpower= INTEG (personnel change of ANSF, initial actual manpower), Units: MP
level of security= INTEG (success and effectiveness of ANSF-insurgency, initial level of
   security), Units: S
insurgency=(1-level of security)*vulnerability, Units: S/Month
personnel change of ANSF=(money to fund ANSF*hiring-defection)*actual manpower, Units:
   MP/Month
success and effectiveness of ANSF=performance relative to threat*actual manpower, Units:
   S/Month
costs of ANSF=payment*actual manpower, Units: $/Month
defection=injustice in distributing money*insurgency, Units: 1/Month
injustice in distributing money=corruption*money to fund ANSF, Units: 1/S
money to fund ANSF=available funding of ANSF-costs of ANSF, Units: $/Month
initial actual manpower=0.1, Units: MP
initial level of security=0.9, Units: S
available funding of ANSF=1, Units: $/Month
corruption=2, Units: Month/(S*$)
performance relative to threat=0.5, Units: S/(MP*Month)
hiring=1, Units: 1/$
payment=1, Units: $/(MP*Month)
vulnerability=1, Units: 1/Month
INITIAL TIME=0, FINAL TIME=10, TIME STEP=0.015625, Units: Month
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The simulation of the model shows a rather drastic change of its dynamic behavior when the performance of ANSF relative to threat is increased (see Figure 3), the available funding for ANSF is increased (see Figure 4), or corruption is decreased (see Figure 5). The purpose of this kind of simulation is not an exact prognosis of the system's development in the future. System dynamics has always made an interesting distinction between endogenous and exogenous variables in explaining the dynamic behavior of a system over time.

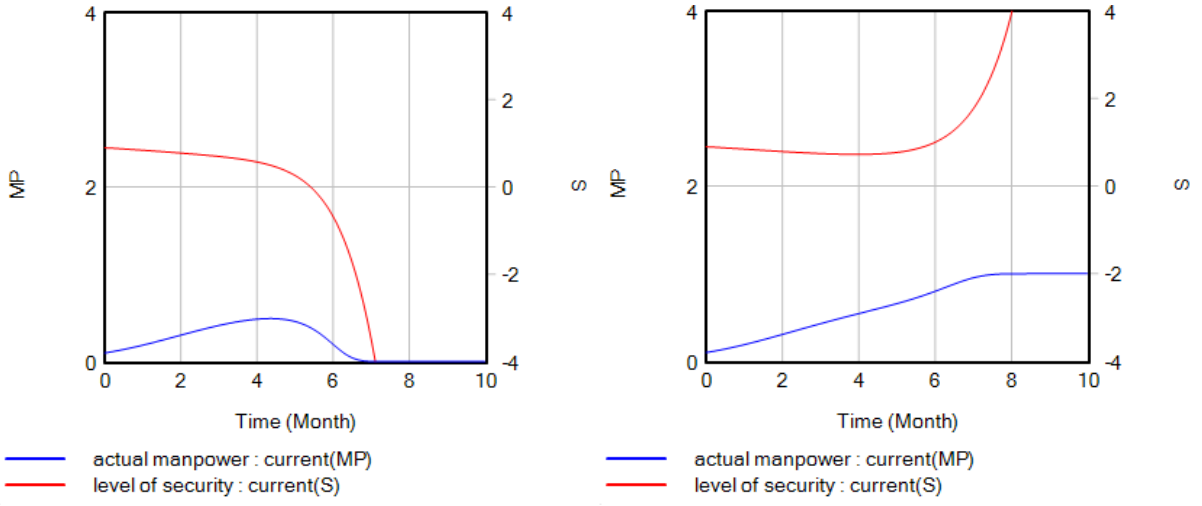

Figure 3: Variation of performance of ANSF relative to threat, where actual manpower $M(0) = 0.1$*, level of security* $S(0) = 0.9$*, available funding of ANSF* $f = 1$*, corruption* $c = 2$*, performance relative to threat* $t = 0.5$ *(left) and* $t = 0.51$ *(right), hiring* $h = 1$*, payment* $p = 1$*, vulnerability* $v = 1$

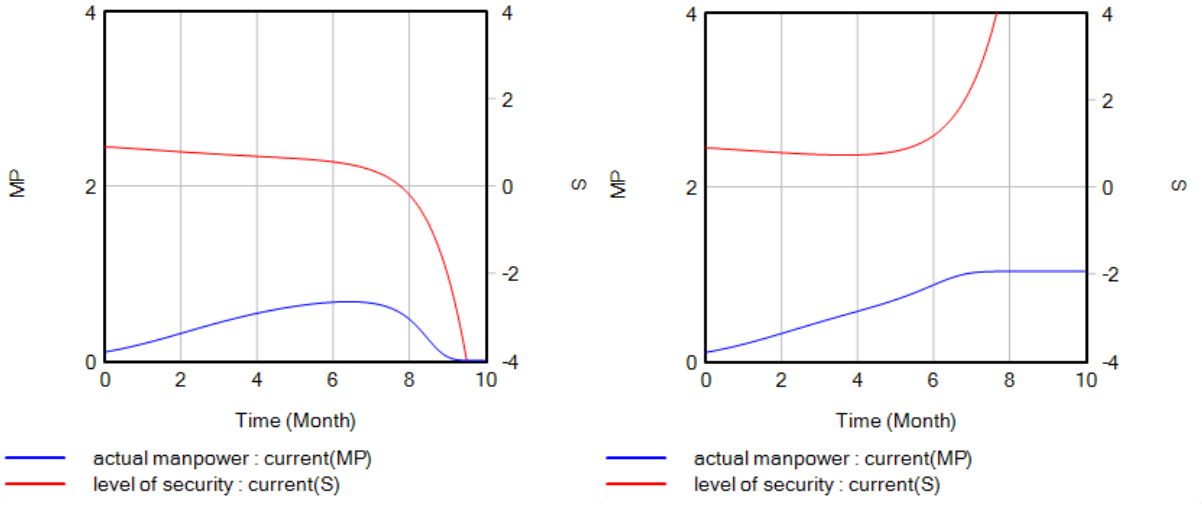

Figure 4: Variation of available funding for ANSF, where actual manpower $M(0) = 0.1$*, level of security* $S(0) = 0.9$*, available funding of ANSF* $f = 1.02$ *(left) and* $f = 1.03$ *(right), corruption* $c = 2$*, performance relative to threat* $t = 0.5$*, hiring* $h = 1$*, payment* $p = 1$*, vulnerability* $v = 1$

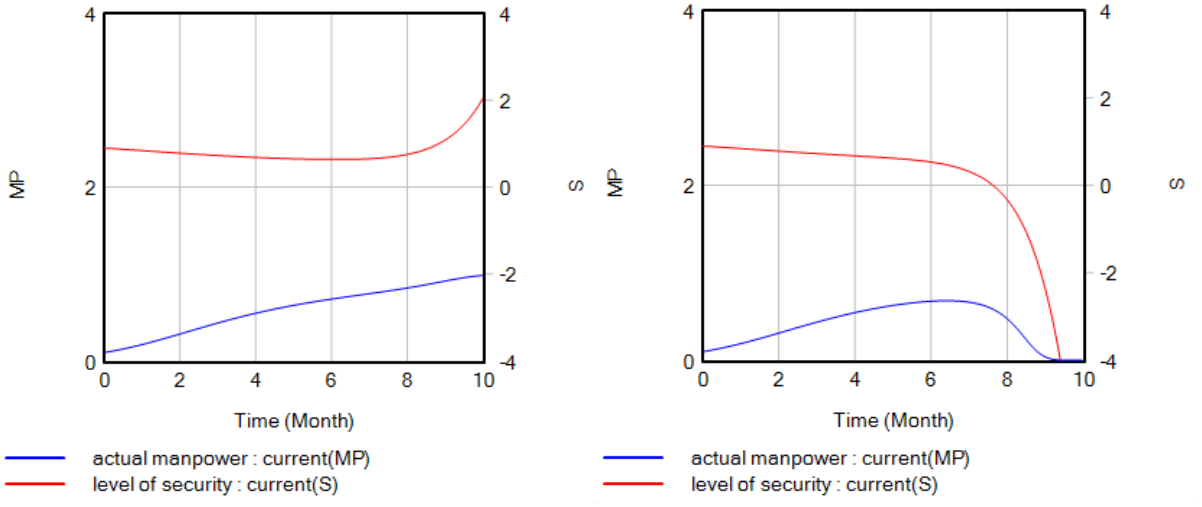

Figure 5: Variation of corruption, where actual manpower $M(0) = 0.1$*, level of security* $S(0) = 0.9$*, available funding of ANSF* $f = 1$*, corruption* $c = 1.89$ *(left) and* $c = 1.88$ *(right), performance relative to threat* $t = 0.5$*, hiring* $h = 1$*, payment* $p = 1$*, vulnerability* $v = 1$

Analysis of Dynamics

The resulting equations here represent the previous assumptions and findings in a rather abstract way. Due to cancelling intermediate variables only the factors relevant for the differential equations appear.

Set of differential equations:

$$\frac{dM}{dt} = \big(h - cv(1-S)\big)(f - pM)M\,, \qquad \frac{dS}{dt} = tM - v(1-S)$$

Levels: actual manpower M, level of security S

Parameters: available funding of ANSF f, corruption c, performance relative to threat t, hiring h, payment p, vulnerability v

Equilibria:

$$0 = \frac{dM}{dt} = \big(h(f - pM) - cv(f - pM)(1-S)\big)M\,, \qquad 0 = \frac{dS}{dt} = tM - v(1-S)$$

$$\Longrightarrow \left(M = 0 \vee M = \frac{f}{p} \vee S = 1 - \frac{h}{cv}\right) \wedge S = 1 - \frac{t}{v}M$$

$$\Longrightarrow (M = 0 \wedge S = 1) \vee \left(M = \frac{f}{p} \wedge S = 1 - \frac{tf}{vp}\right) \vee \left(M = \frac{h}{ct} \wedge S = 1 - \frac{h}{cv}\right)$$

For $h = p = v = 1$: $(M = 0 \wedge S = 1) \vee (M = f \wedge S = 1 - tf) \vee \left(M = \frac{1}{t} \wedge S = 1 - \frac{1}{c}\right)$

For $f = 1, t = \frac{1}{2}, c = 2$: $M = 1 \wedge S = \frac{1}{2}$

Agent-Based Model and Rule Sets

Our model aims to investigate pattern formation in hierarchical structures built by members of different ethnic groups and military ranks. It includes the distribution of the soldiers' pay with some commanders being corrupt and taking away their inferiors' pay.[10]

Starting with the root soldier in the center (see Figure 6), the hierarchical structure is constructed, where the number of levels in the hierarchy (military ranks), the number of ethnic groups, and the number of inferiors that each higher level ranked soldier has below him are given – this can also be referred to as the multiplicity factor for the increasing number of soldiers on each level.

However, this order of the model does not determine the number of the lowest level of foot soldiers. In other words, our model allows the setting of the number of the lowest-rank soldiers. With the above network, we create an artificial environment with various agents, all soldiers of different ranks and different ethnicities, reflecting a highly simplified ANA.

Following ABM, our agents are equipped with a certain set of rules, described in the following. The behavior of soldiers is discriminated into preference or non-preference of one's own ethnic origin for the distribution of pay, referred to as corrupt.

Corruption, in our model, means that the corrupt soldiers take his pay and then distributes the earnings of his subordinates among them in a manner which prefers subordinates of the same ethnicity and who are corrupt themselves. This system assumes that money "trickles" through the system

[10] Segregation, by Thomas Rieth (model ID 4110) - NetLogo Modeling Commons. https://modelingcommons.org/browse/one_model/4110#model_tabs_browse_info

starting with the highest ranks and ending with the lowest ones. In this process, money is being distributed, diverted, and redirected by corrupt superiors.

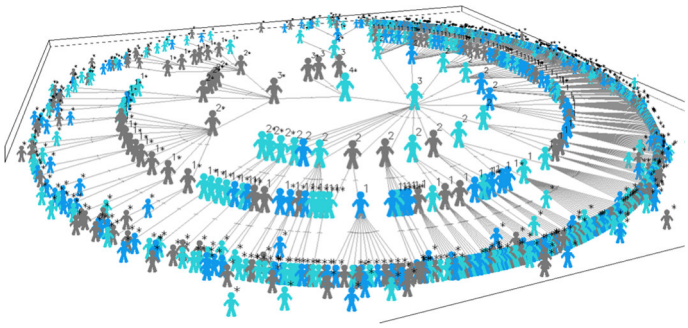

Figure 6: Visualization of the model's hierarchical structure: The root element, i.e. the soldier of highest rank, is in the center of the network. A number at the agent's side characterizes his level in the hierarchical structure, and a star (*) indicates if the soldier (agent) is corrupt.

Two processes influence the stability of the hierarchical network.

1. First, soldiers at the lowest level, the rank and file, leave the network if their pay is not sufficient, and may join again later. We use leaving and re-joining soldiers to reflect the desertion of rank-and-file soldiers in the security forces, their defection to local warlords, and a low re-enlistment rate of the ANA. This feature represents a limited pool where soldiers for the ANA can be retrieved, and a re-joining probability is a measure for the limited disposability of soldiers.
2. The second process influencing the network's stability are soldiers at higher levels selecting another superior, i.e. they change their loyalty thereby reflecting the not unusual shifts of alliances within Afghan society.

In the model, we also play with the amount of income determined not only by corrupt officers, but also by the state. In other words, the norm or standard earnings for each soldier are set at the value of 1, independent of the soldiers' ranks. However, the model allows changing the amount of provided payment (deviating from the above norm) to simulate the system's behavior in different scenarios, ranging from too little pay to very generous incomes provided by the Afghan state.

During each simulation step the acquired pay of each soldier is reduced by one which simulates that every soldier spends his money for living. Corrupt soldiers spend an additional amount to survive in the system; if they take money from others, they have most likely also to pay more to their superiors. If a soldier's pay is not sufficient, i.e. the pay decreases below zero, the soldier will be dissatisfied and locally change the structure of the network either by leaving the network or selecting another superior. The number of satisfied soldiers, on the other hand, is used as a measure for the network's stability. While soldiers at the lowest level – here called leaf-soldiers – can leave the network if their pay is not sufficient and join again later (reintegration is determined by a given probability), soldiers at higher levels – here called officers – start selecting another superior. Officer behavior does not apply for the root soldier in the center, or head officers at the level just below the root level.

While non-corrupt soldiers distribute the received payment evenly and honestly among their subordinates, the corrupt soldier prefers first other corrupt subordinates of same ethnicity, secondly subordinates of the same ethnicity, and third subordinates of a different ethnic group. The first case involves the additional costs mentioned earlier paid by corrupt soldiers. In the second case, the amount of pay to the next level is increased by a multiplication factor of the corruption costs, while in the third case, the corrupt superior pays his inferior too little or nothing. During the distribution of various incomes, the receiving corrupt soldier will distribute the payment accordingly.

Formation of Ethnic Clusters due to Corruption

Depending on the set-up of the network and its parameters, one can observe the formation of clusters around corruption and the same ethnicity, as can be seen in the left part of Figure 7. To characterize the segregation a value for energy of segregation E is calculated, which describes the formation and the size of the clusters.

$$E = \sum_{\text{all agents } i} E_i = - \sum_{\substack{\text{all pairs} \\ \text{of agents} \\ <i,j>}} J_{ij} \quad \text{where } J_{ij} = \begin{cases} +1 & \text{for linked agents } i \text{ and } j \text{ of same ethnicity} \\ -1 & \text{for linked agents } i \text{ and } j \text{ of different ethnicity} \\ 0 & \text{otherwise} \end{cases}$$

This value for characterizing the segregation is called energy here following similar definitions in the physical sciences of Thermodynamics; it does not affect the dynamic of the structure; it is just a measure for the segregation. The individual agents' energy value E_i is calculated for each soldier by initially setting its energy value to zero and then comparing its ethnicity with his directly linked neighbors in the network. A different ethnicity increases the agent's individual energy by one, while the same ethnicity decreases it by one.

Free moving soldiers with no neighbors will have an energy value of zero, because they are not linked to others in the network. By summing up all values of the individual energy the total energy of segregation for complete hierarchical structure is calculated. While a value like the fraction of the various ethnicities is just representative on the macro-level of the whole structure, the segregation energy represents the ethnic segregation on a micro-level of the individual soldiers: the lower (higher) the total energy of the segregation, the more (less) homogeneous the observed structure, the stronger (weaker) a clustering and segregation (desegregation, intermixing) of the ethnic groups is observed.

A look at Figure 7 allows the conclusion that networks with a lot of corruption show the formation of large visible ethnic clusters (left), while the ethnicities in networks with low grade of corruption are much more mixed.

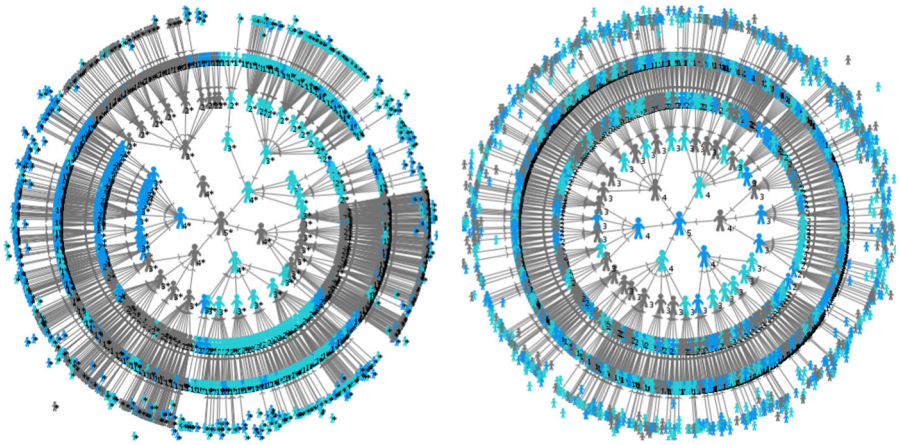

Figure 7: Visualization and comparison of the formation of cluster in a network of five levels and multiplicity of six, 1000 soldiers at rank and file, re-joining probability of 0.33, and additional corruption cost of 10 % after 50 time steps with corruption of 100% and well-funded payment (100%) at the left and corruption of 0% and underpaid due to 95% of required payment.

This tendency is even more visible upon calculating the energy of ethnic separation of a network as shown in Figure 8. As expected in a network without any corruption and a sufficient payment of 100% all soldiers are satisfied, and based on the rules, the structure of the network will remain static, i.e. no dynamic can be observed. This can be easily identified in the straight line in Figure 5 for the case of 0% corruption.

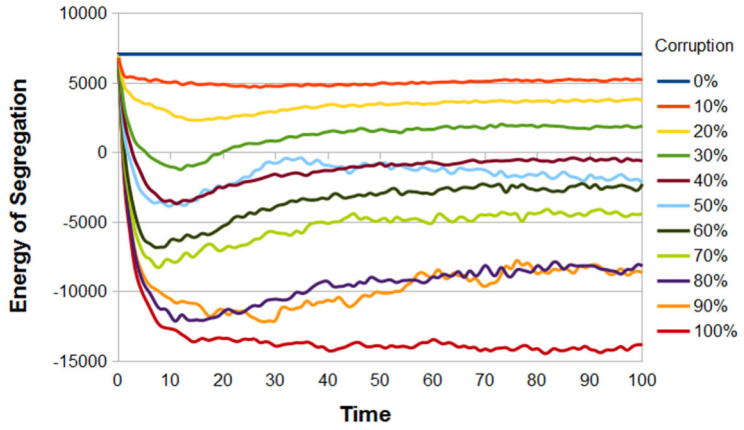

Figure 8: Energy of segregation as function of time for different grades of corruption in a network of six levels and multiplicity of six, 1000 soldiers of file and rank, well-funded payment of 100%, with a re-joining probability of 0.33 and additional corruption costs of 10%

Stability of the Network with Insufficient Financial Basis

An interesting question in this context is the stability of the network under the influence of payment and the level of corruption. As a measure for the stability of the network we will use the number of satisfied soldiers, which are soldiers that neither leave nor change inside the network due to underpayment. At first, one expects, that the more corruption in the hierarchical structure exists, the less stable it will be, and second, that excessive overpay might cause a more stable structure. Figure 9 compares the influences of payment, i.e., above or below the norm, with the effect of different levels of corruption. One can easily notice that in case of 50% of corrupt soldiers in the network the formation of clusters increases with the level of payment, but for values of 100% corruption the separation energy increases.

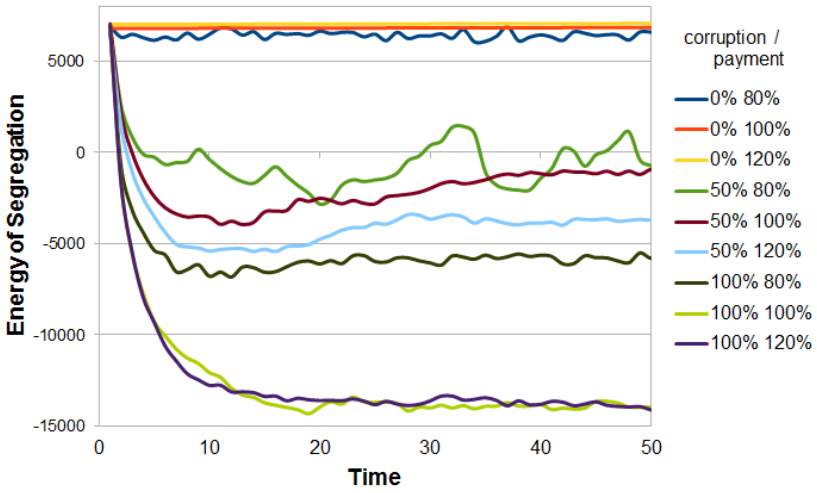

Figure 9: The formation of clusters as a function of the energy of segregation over time for different levels of payment and corruption in a network of six levels, a multiplicity of six, 1000 soldiers of file and rank, with a re-joining probability of 0.33 and additional corruption costs of 10%.

For deeper analysis of this effect, the stability of the whole network, i.e., the percentage of non-leaving and non-changing "satisfied" soldiers was determined by averaging over 10 simulation runs for different values of corruption and payment. The results in Figure 10 clearly indicate two domains of dynamics and stability. In the first domain, where the hierarchical structure and its dynamics are governed by underpay, the satisfaction – i.e., the percentage of satisfied soldiers – is not changed by changing the level of corruption. Here, the satisfaction increases linearly with the payment of the

whole structure. In the second domain, with a well-funded or overpaid structure, one observes that the satisfaction does not change due to the overall payment. In this region, the level of corruption is the main factor for the stability of the network structure.

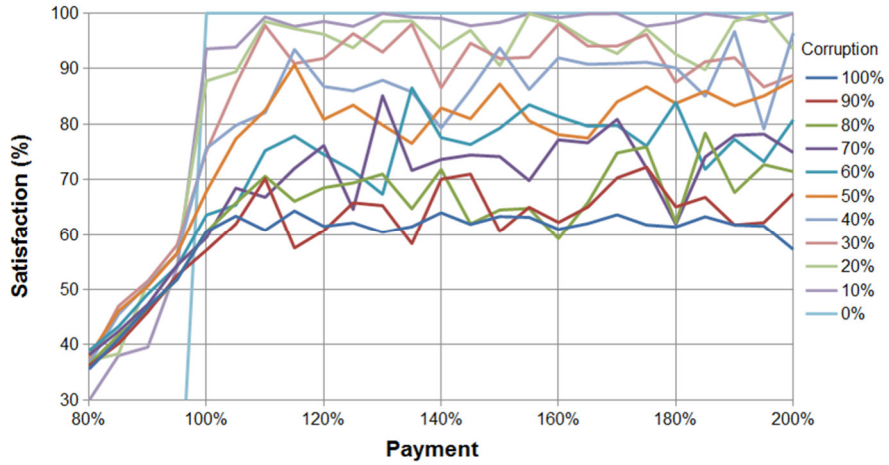

Figure 10: Ratio of satisfaction as function of the payment for different levels of corruption: The values are averaged over 10 simulation runs for a network of three different ethnics, five levels, a multiplicity of six and 1000 soldiers at rank and file with a joining probability of 0.33. The additional costs of corruption had been 10%.

The relation between the soldier's satisfaction – the stability of the network – and payment, on one side, and corruption levels in the ANA, on the other hand, is shown here. Naturally, insufficient payment below the norm – that is below 100% in the graph – causes a lower level of stability expressed in the ratio of satisfied soldiers. However, it shows – and this finding is rather surprising – that corruption does not play such an important role as expected in the level of satisfaction in case soldiers receive too little pay. Conversely, when payments reach normal levels, corruption levels do obviously influence the soldiers' satisfaction, but then (under these circumstances) the amount of financial support flowing into the structure does not matter anymore.

Looking at the range of overpayment (payment > 100%) in Figure 10 the level of satisfaction seems to be constant for a given level of corruption despite the strong fluctuations. Therefore, by averaging the values of the satisfaction ratio in this range of overpayment a dependency between the levels of satisfaction in case of overpayment as a function of the corruption was found. The results are presented in Figure 11.

This finding indicates system behavior of a certain self-regulation in the sense that no matter how good the soldiers are paid by the government, their corrupt superiors will most likely take some of it away. In other words, for the rank and file, it does not matter if the government decides to increase their pay – their superiors will most likely take away the extra above normal pay – and hence, only the high level of corruption bothers those foot soldiers.

Another interesting aspect to be investigated is the effect of corruption among leaders, i.e. the higher ranks. Therefore, a network with 50% corrupt soldiers was prepared and the two highest levels in the hierarchical structure were set all either corrupt or non-corrupt. The behavior of ethnic segregation energy and satisfaction over time can be seen in Figure 12. As one might suspect, there is a strong influence of the leaders' corruptness on the dynamic behavior of the network, although the overall number of corrupt soldiers has not changed significantly.

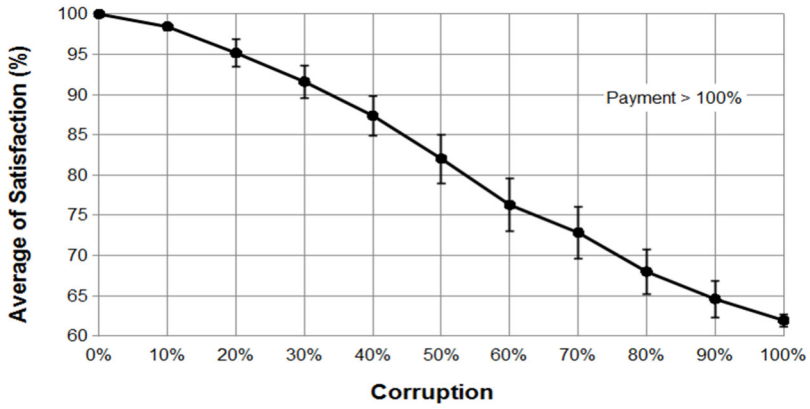

Figure 11: Stability of the structure as a function of the corruption in the domain of overpayment: The values have been obtained from Figure 10 by averaging over the satisfaction for payment equal or greater 100%.

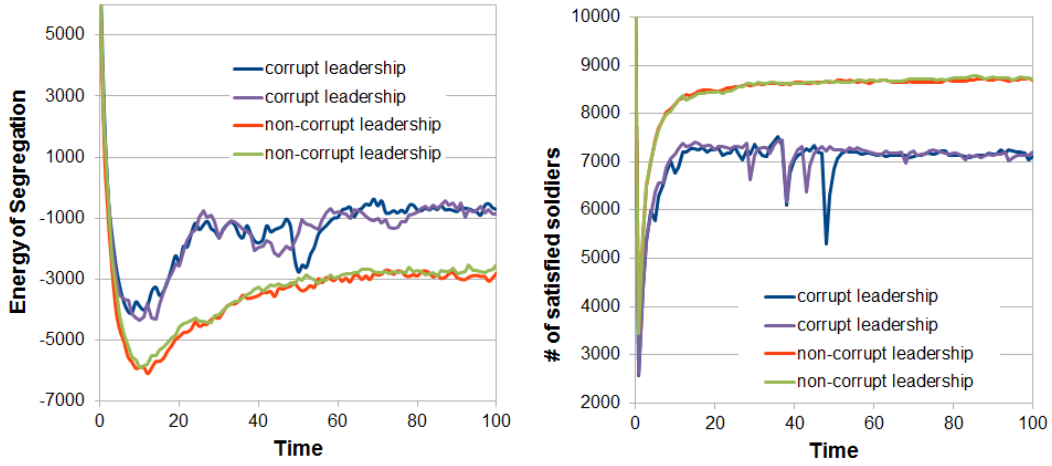

Figure 12: Energy of segregation (left) and the level of satisfaction (right) as function over time in a network of six level and multiplicity of six, 1000 leaf soldiers, 50% corrupt soldiers, 100% payment, re-joining probability of 33%, and 10% additional corruption costs for the case of a corrupt and a non-corrupt leadership at the highest two levels.

Key Findings

The method of ABM, applied here, indicates that lack in cohesion and the problem of ethnic fragmentation are effects caused by monetary issues, that is insufficient funding and corruption. But the relationship is not as trivial as it seems at first. Corruption does not play a relevant role a not sufficiently funded ANA. Here, cohesion and ethnic fragmentation are clearly controlled by the level of funding. From this finding, follows an important, yet at first sight surprising policy recommendation: if you expect insufficient funding in the future, there is no need to care about corruption inside the ANA now. This advice is especially relevant given the most likely upcoming donor fatigue once ISAF has ended in 2014. Though ISAF is followed by another mission, Resolute Support, it will be comparatively small in numbers. But with most soldiers leaving the country, international financial support will decrease considerably.

The influence of corruption is important only in case of a well-funded ANA. In this case an increase of financial funding has no visible effect on the stability and ethnic fragmentation of the ANA. This finding clearly shows that the negative effects of corruption cannot be countered by pouring additional money into the system: “the provided money will always flow into the wrong channels.” The model has shown that the higher the level of corruption inside the ANA, the stronger is the negative effect of corruption. A simple advice – not surprising from a commonsense perspective: if you want to fight corruption, consider the leaders first.

The key finding of the agent-based model for a hierarchical dynamic network structure of the ANSF are very similar to other studies. Two key criteria for success are external to the ANSF and will require careful attention and support from the US. First, the ANSF cannot succeed without effective Afghan leadership and a reasonable degree of national unity following the 2014 election. To what extent Karzai's follower will be up to the task of creating something remotely like national unity or even loyalty in the army, remains to be seen.

Second, the ANSF cannot survive without adequate external funding through at least 2017.[11] At present, the lack of leadership, reliance on power brokering, and corruption in both the ANSF and civil side of Afghanistan are as much a threat as the insurgents.[12] History provides clear warnings that the continued availability of enough money to fund the ANSF, and the degree of honesty in distributing that money, will be other key criteria shaping the ANSF's real world effectiveness. There are no credible unclassified data on either the future costs involved or the level of funds that will really be made available.[13]

Creating an effective ANSF requires a new approach to assessing the development of Afghan forces that is based on a conditions-based net assessment of how given elements of the ANSF perform relative to insurgent factions, and one that is tied to a similar assessment of the relative success of the Afghan government, insurgents, power brokers, and other factions in winning support in given areas. It means shifting from force building metrics based on largely arbitrary total manpower goals to a focus on what elements of the ANSF prove to be most effective as Transition occurs, and their performance in the field. It means focusing resources on the most effective force elements, rather than arbitrary manpower or readiness standards, and regularly assessing how given elements of the ANSF's order of battle perform relative to threat and militia forces.[14]

Despite billions of dollars of international investment, army combat readiness has been undermined by weak recruitment and retention policies, inadequate logistics, insufficient training and equipment and inconsistent leadership. International support for the ANA must therefore be targeted not just toward increasing the quantity of troops but enhancing the quality of the fighting force.[15] These developments are even more problematic considering current proposals to reintegrate and reconcile elements of the insurgency.[16]

Conclusion

In this paper we used the methods of ABM and System Dynamics to analyze the current issues and the stability of the ANA. We found that a lacking cohesion and the problem of ethnic fragmentation are affected by monetary issues of insufficient funding and corruption in a non-trivial way. We identified the following conclusion: first, if you expect an insufficient funding in the future, there is no need to care about corruption inside ANA now, and second, if you want to fight corruption, consider the leaders first.

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[11] Anthony Cordesman, "The Uncertain Role of the ANSF in Transition: Establishing Real World Criteria and Metrics," Testimony to the House Armed Service Committee, 27 February 2013, p. *iii*.
[12] Ibid p. 4
[13] Ibid p. 9
[14] Ibid p. 29
[15] International Crisis Group, A Force in Fragments: Reconstituting the Afghan National Army, 12 May 2010, p. *i*
[16] Ibid p. *ii*