

# POWER, RESOURCES, AND VIOLENCE IN CONTEMPORARY CONFLICT: ARTIFICIAL EVIDENCE

Armando Geller

Centre for Policy Modelling  
Manchester Metropolitan Business School  
Aytoun Building, Aytoun Street  
Manchester, M1 3GH  
United Kingdom  
armando@cfpm.org

**Abstract.** Traditionally, approaches to conflict analysis have underlined the importance of a systems theoretic perspective. However, recent studies of contemporary conflicts have been often dominated by mono-causal thinking. This paper emphasizes the importance of a complex systems approach to conflict analysis by presenting an agent-based social simulation implementation of a simple – although not trivial – and generic conflict ontology. Four different types of agents – politicians, businessmen, warriors, and civilians – constitute an artificial conflict society by virtue of which a variety of phenomena can be studied and validated against reality. Preliminary results suggest that an increasing number of political stakeholders paradoxically leads to intensified interfunctional fighting while at the same time lowering the number of civilian casualties; that although violence in contemporary conflicts measured as number of dead civilians takes the form of a lognormal distribution, its magnitude and timing for any particular moment cannot be predicted; that economic factors do not have the unequivocal and linear impact on violence in contemporary conflict as claimed by a number of recent publications.

**Keywords:** Agent-based modeling, conflict analysis, critical realism, social simulation.

## 1. Introduction

Contemporary conflict is social phenomenon of high complexity. On one hand, contemporary conflict is difficult to pervade intellectually. Thus, mono-causal and -variate explanations fall short of providing a coherent explanation. On the other hand contemporary conflict forms part of a type of social phenomena that can be perceived as complex in the more technical sense of the term. A variety of social phenomena exhibit characteristics which can be labeled as complex [2], [6], [10], [19], a condition in which agent behavior and social interaction combine to generate macro level outcomes that i) could not be predicted from knowledge of the behavior and nature of

interactions alone and ii) result in sporadic volatile episodes the timing, magnitude, duration and outcomes of which are themselves unpredictable.

Agent-based social simulation is an appropriate methodological tool to cope with both forms of complexity. Embedded in critical realism, a meta-theory compatible with complexity science [5], [11], agent-based modeling can provide an *entrée* to the object under investigation. Social science in the tradition of critical realism focuses on a context sensitive approach to agency and structure, the interplay of which leads to emergent phenomena, underlining the generative paradigm of computational social science [26]. The *entrée* to the object under investigation is provided by an intuitional model that serves as a *redefinition* (which can take the form of ontologies) and thus specification to the context-relevant aspects of agency and structure [21]. Once properly defined, the intuitional model needs to be qualitatively validated to ensure the descriptive accuracy of the computationally implemented processes (agency) and architectures (structure).<sup>1</sup> A construct valid model is expected to yield strong results which can be cross-validated against real world (statistical) data (if available).

Research conducted on contemporary conflicts (Afghanistan, Chechnya, Iraq, Liberia etc.) can be roughly divided into three, often overlapping, fields: i) hermeneutical-descriptive studies, ii) empirical socio-scientific studies, iii) qualitative socio-scientific studies.

One of the predominant, if contradictory, notions in the field of hermeneutical-descriptive studies is Mary Kaldor's *œuvre* on so called "new wars". She introduces a vague but nevertheless insightful conceptualization of contemporary conflicts. Kaldor [15] defines (contemporary) conflict "as [a] conflict between politically organized groups involving large-scale violence." States do not matter anymore; conversely their disintegration leads to the diminishing importance of state borders, the interdependence of internal and external actors and the emergence of new non-state actors. Furthermore, shadow economies develop where property rights cannot be guaranteed anymore – thus, an anomic space evolves. One of the main driving forces in a contemporary conflict setting is what Kaldor [15] refers to as the "politics of identity". By this she means the manipulation of groups by stakeholders with a repertoire of traditional or newly invented cohesion generating categories such as ethnicity, religion or tribe. Although this approach appears to function as an intuitive and thus explorative gateway to the subject, formalization, comparability and generalization are wanting throughout the hermeneutical-descriptive paradigm.

Standardized empirical studies can capture these features. A classic empirical analysis of a contemporary conflict is Allan and Stahel's [1] study of the Afghan war (1979–1989). The authors' findings highlight two important factors of contemporary conflicts, namely demography and development status of a conflict region. Collier and Hoeffler [7], currently perhaps the most influential scholars in the field, demonstrate that Allan and Stahel's results stand up to current and more generalized empirical findings and shed light on new aspects in congruence with insights provided by Kaldor [15]. In concreto they find that initial income, ethno-linguistic factionalization, the amount of natural resources, initial population size, and economic opportunity, rather than economic hardship, are determinants of the duration and probability of contemporary conflicts [7]. This literature is concerned with aspects of

---

<sup>1</sup> For a qualitative validation of the ontological model introduced in section two see [11].

society that are found with or perhaps cause socio-political outcomes. However, scant attention is paid to the social processes inherent in contemporary conflicts.

Qualitative socio-scientific research designs are evidence-based and intended to shed light on the details of contemporary conflict's underlying structures and processes. Scholars from the fields of African Studies, Social Anthropology, and Sinology are examining the field of neo-patrimonialism for Sub-Saharan Africa [23], big men in Papua New Guinea [12], or warlords at the beginning of the 20th century in China [27]. Qualitative socio-scientific research designs may not only lead to *verstehen* in a Weberian [30] sense, but may also run counter to popular scientific prejudices. Richards [25] provides compelling evidence in the case of Sierra Leone that political motives play a considerable role in contemporary conflicts and Besteman [4] convincingly rejects the presumption that clan-based feuding led to looting in Somalia. While socio-scientific qualitative studies give a greater emphasis to the understanding of social process, they are difficult to generalize and to compare with the more formalized studies of the empirical socio-scientific paradigm or even among themselves.

Although none of these approaches is inherently incompatible with agent-based social simulation, the latter exhibits properties which enable to approach the object under investigation in an intuitive, formalized and context sensitive way. Indeed, structural relations are central to the design of agent-based models and the agent design itself cannot ignore behavioral and social processes.

Section 2 describes an intuitive but nevertheless scientifically informed *entrée* to contemporary conflict. While section 3 provides the model's specifications, section 4 discusses the simulation results. The concluding section gives a general account of the simulation results and presents a selection of analytical desiderata.

## **2. An Ontological Representation of Contemporary Conflict**

Power structures are anthropogenic [22]. For conflict regions such as Afghanistan, Chechnya or the Democratic Republic of Congo the anthropogeneity of power has been shown in a variety of case-studies [4], [9], [25].

Sofsky [28] argued that conflict societies are societies *sui generis*. They function according to their own social laws and are structurally and processually disjointed from societies lacking a comparable degree of organized violence. In conflict-torn societies virtually anything goes. This can be illustrated by the concept of anomie. Anomie is the situation in which the upper and lower normative boundaries for the aspirations of members of a society are thrown awry [8], [16]. An anomic situation emerges when the means to attain a specific goal, such as accumulation of wealth or power, run out of social control [18]. Accordingly, in a space missing restricting norms, i.e. an anomie, virtually anything goes – also the creation of power structures to one's own ideas and interests.

Anomic spaces are political spaces lacking strong modern institutions, such as the state's monopoly on organized violence, stability of the law and protection of property rights. In these circumstances only highly adaptive stakeholders prevail. The

socio-structural outcomes representing anomie are manifold and so are the adopted means that serve one's interests.

In contemporary conflict societies neo-patrimonialism is a prevailing organizational principle – perhaps the most important one [11], [17], [25]. Weber [30] understands patrimonial power as power based on authority, suppressed subjects and paid military organizations, by virtue of which the extent of a ruler's arbitrary power as well as grace and mercy increases. Stakeholders interested in gaining power in contemporary conflict settings have to act neo-patrimonially to accumulate and redistribute monetary and material as well as social resources. The range of related activities is broad and includes corruption, clientelism, patronage, nepotism, praebendism and so forth [17].

Political actors in contemporary conflicts need to have at the same time the ability to accumulate material and/or social resources as well as the ability to redistribute them [12], [27]. Thus, political actors in contemporary conflicts accumulate power by means of neo-patrimonialism. To prevail, politicians need to interact with the economic and the military subsystems. The ontological representation of contemporary conflict depicted in figure 1 refers to this by the politicization of the economy and the military.



**Fig. 1.** Ontological representation of contemporary conflict. The three subsystems politics, economy and military constitute a contemporary conflict system.

The notion of the “shadow state” can be used to link the political with the economic system via the mechanism of neo-patrimonialism [3], [23]. Political actors' neo-patrimonial behavior necessitates economic actors to adapt themselves to the practices prevalent in contemporary conflicts if they want to succeed economically. This leads to a criminalized economy. Moreover, the economic subsystem penetrates the military subsystem. In an anomic space, where property rights cannot be safeguarded, the economization of the military arises from a personal and economic necessity. Hiring military actors is an outsourcing process to ensure security in economically relevant areas.

Contemporary conflicts, notorious as they are, cannot be reduced phenomenologically to violence as an end in itself. Ellis [9] and Richards [25] expose in two carefully conducted case studies the role of violence with respect to politics in Sierra Leone and religion in Liberia. The militarization of politics and the economy

brings this aspect into the foreground. While the former illustrates the representation of political ideas by means of organized violence, the latter marks rent-seeking behavior.<sup>2</sup>

### 3. ConflictSocietyModel2 (CSM2) Specifications<sup>3</sup>

The CSM2 is a computational implementation of the abovementioned ontological representation of contemporary conflict. The three constitutive subsystems politics, economy and military are represented in the CSM2 by three agent types, namely politicians, businessmen and warriors. A model of contemporary conflict would be incomplete without civilians. The reason civilians are excluded from the ontology is that they are not constitutive to contemporary conflicts, this is to say that they only exhibit reactive behavior. This is in contrast to politicians, businessmen and warriors who are active. In the CSM2 civilians are modeled.<sup>4</sup>

The agent rules are designed to represent neo-patrimonial behavior as introduced above. Table 1 presents a summary listing of the agent rules. Politicians allow for affiliation with businessmen and warriors. Hence, in their behavior, they are following what has been described above as the politicization of the economy and the military. Affiliation with either businessmen, warriors or civilians renders politicians more powerful. Businessmen are accountable for a bigger power increase than warriors. Politicians are sensitive to loss of military power, proxied by loss of warriors per defined period. If defeated, politicians can subordinate themselves, if they can pay tribute. Otherwise they flee to a new location. Both rules cannot be directly inferred from the conflict ontology. However, the both are plausible as subordination often occurs in contemporary conflict and military losses consequentially lead to loss of territory.

Businessmen seek politicians, as the economization of politics suggests. However, for modeling reasons, they do not actively seek warriors.<sup>5</sup> Yet they do emanate something like a money pheromone in the range of their vision that makes them attractive to warriors. Businessmen avoid competition as they do not want to be close to other businessmen. They also avoid high levels of violence by withdrawing from the conflict zone, i.e. the CSM2, and return when violence has reached an acceptable level again. (This, of course, also represents the exploitability of material resources.)

---

<sup>2</sup> Critiques of my ontological representation of contemporary conflict have stated that it lacks the religious dimension. Obviously, the reference to Kaldor [15] should have made clear that the political subsystem does include religion very well.

<sup>3</sup> The CSM2 is a considerably enhanced version of the ConflictSocietyModel (CSM). The CSM has been presented in various forms at the European Social Simulation Association Conference 2007 (ESSA2005), the Agent2005 conference, the Eastern Economic Association Conference 2006 and the International Political Science Organisation World Congress 2006.

<sup>4</sup> It has been criticized that the CSM2 lacks the implementation of resources. While social resources are obviously introduced, material resources are assumed to be represented by the businessmen themselves. Businessmen, so to speak, are not present where there is no business opportunity available.

<sup>5</sup> If they would do so, they should be seeking the warrior's leaders and they are not modeled.

**Table 1.** CSM2 agent rules.

	<b>Agent</b>			
	<b>Politician</b>	<b>Businessman</b>	<b>Warrior</b>	<b>Civilian</b>
	Allow for affiliation with businessmen and warriors	Seek politicians	Seek politicians for affiliation	Seek politicians
	Subordinate if defeated and able to pay tribute	Avoid competing businessmen	Affiliate with politicians	Affiliate with politicians
	Flee if defeated but unable to pay tribute	Withdraw from conflict if too much violence	Seek businessmen	Avoid warriors
<b>Rule</b>			Organize a marauding horde with other warriors	
			Fight only if affiliated to a politician or organized in a marauding horde	
			Fight only warriors and civilians of the same politician or marauding horde	
			Recruit civilians	
			Transform into a civilian	

In accordance to the militarization of politics and the economy warriors seek politicians and businessmen and can affiliate with them. Warriors form a marauding horde (i.e. an organized group), when three or more warriors are spatial neighbors. Warriors can only fight when they are affiliated with a politician or when they are a member of horde. Fighting for a politician is vicarious for the militarization of politics and (since politicians attract more businessmen when they have more military power) for the militarization of the economy. Warriors can kill other warriors and civilians who are not affiliated with the same politician or member of the same horde. Warriors can recruit civilians. After a specified period of non-engagement in violence, they become civilians again.

Civilians seek politicians and affiliate with them for protection, as they become less a target for warriors. However, civilians do not provide politicians with power, since they are not constitutive to the iCSM. Obviously civilians avoid the proximity of warriors.

A number of processes in the CSM are of stochastic nature, such as the movement of the agents or inter-agent behavior such as the outcome of a fight, a recruitment offer or re-socialization of warriors. While the introduction of plausible, i.e. evidence-

based, actor strategies to the CSM2, the empirical foundations for the fighting-, recruitment- and re-socialization processes are scarce [11].

The CSM2 is implemented in Repast. The default agent specification is: 10 politicians, 20 businessmen, 50 warriors and 1000 civilians. Businessmen, warriors and civilians have a predefined and static Moore-neighborhood vision of 2, 1 and 1 respectively. Politicians have a dynamic vision, starting with 3 and depending on their power. The agents populate a toroidal grid of  $70 \times 70$  cells.

#### 4. Simulation Results

Figure 2 depicts a screenshot after 2000 ticks of a representative CSM2 simulation run. The 10 politicians (black) have established their fiefdoms, identifiable as yellow shades, by affiliating with businessmen, warriors and civilians. Three politicians are obviously more successful than the rest of their competitors as they exhibit bigger power shades. The reason for this is that they were able to affiliate with more businessmen (grey), warriors (light green) and/or civilians (light blue) than the other politicians. (Although affiliation with civilians does not account for increases of power, it allows other warriors to recruit them. Once recruited, the new warriors of course increase a politician's power.) This qualifies them as "true" neo-patrimonial rulers.

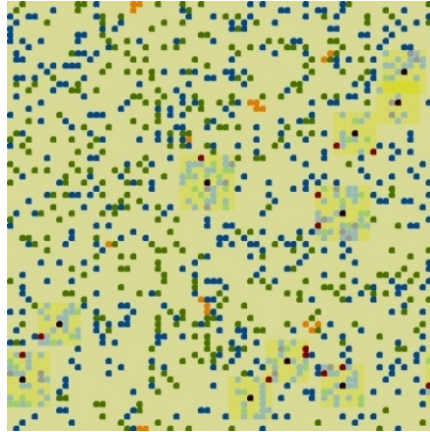
At the fringes of the politicians' fiefdoms there are several red dots visible. They indicate fighting. Warriors fight other warriors or civilians who are not affiliated with the same politician and therefore protect a politician's sphere of interest from intruders. However, some warriors and civilians are able to slip through and become themselves affiliated to the politician. The result is a positive feedback effect: The bigger a politician's fiefdom is, the higher is the likelihood that more agents affiliate with him and the bigger his fiefdom becomes. A large number of warriors (dark green) and civilians (dark blue) are unaffiliated yet. This leaves plenty of leeway for the further evolution of the simulation as it is currently undecided with whom these unaffiliated agents are going to affiliate.

Two effects already mentioned above are of interest at this point: militarization and economization. Recruitment of civilians by warriors can lead to an exponential increase in the number of warriors, leading to a militarization of the CSM2's population. Consequentially, the magnitude of violence increases. This has an impact on the number of businessmen, as they are inversely proportional sensitive to the overall level of violence in the CSM2.<sup>6</sup> A low level of violence, therefore, can lead to an economization of the CSM2. The importance of both effects becomes evident against the background of neo-patrimonialism: At times of high levels of violence, the politicians' power decreases as a result of withdrawing businessmen while low militarization renders them vulnerable to attacks by other politicians. Thus, lingering

---

<sup>6</sup> Although agents in the CSM2 have only limited information – they can "see" as far as their vision –, it is plausible to assume that businessmen are embedded in a business network that provides them with general information about the area they work in.

low level organized violence is most profitable to all three constitutive agent types, i.e. politicians, businessmen and warriors.<sup>7</sup>



**Fig. 2.** A screenshot at tick 4000 of a representative simulation run of the ConflictSocietyModel2 (CSM2) (seed 1178870246095). Politicians are depicted as black dots; the yellow shade surrounding politicians is their zone of influence, i.e. their power. Businessmen are depicted as grey dots. Warriors are dark green if not affiliated, orange if member of a horde, light green if affiliated with a politician and red if engaged in fighting. Civilians are dark blue if not affiliated and light blue if affiliated with a politician.

This finding is depicted in figures 3a and b which are based on data stemming from the same representative simulation run as figure 2. Figure 3a shows that a decreasing level of violence, measured in numbers of fighting per tick and dead civilians per tick, correlates with an increasing number of businessmen. And figure 3b shows that 7 out of 10 politicians achieve their influential climax between approximately 4000 and 10000 ticks, i.e. during a phase of prolonged low intensity violence.

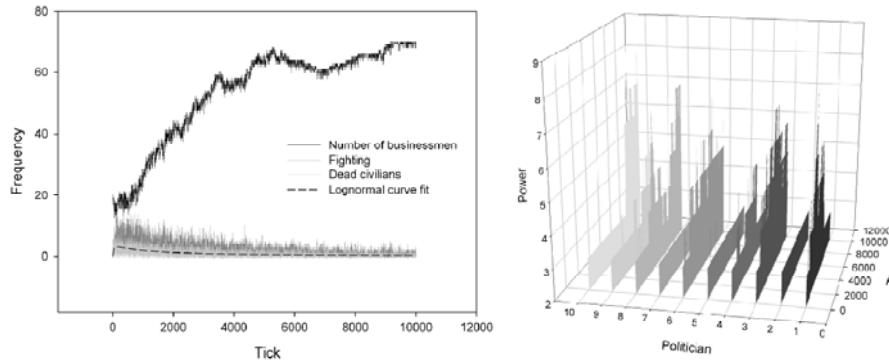
The number of fighting and dead civilians depicted in figure 3a can be divided into further phases. Although short (tick 0 to ~200), phase one is of organizational importance as it is the beginning of the competition for resources. Phase two (tick ~200 to ~1000) is characterized by an explosion of violence. The beginning of a prolonged low intensity conflict starts with phase three (tick ~1000 to ~4000). A lognormal curve fit as depicted in figure 3a characterizes the CSM2's distribution of violence best.

Figures 4a and b depict the number of dead civilians per day for Afghanistan (4a) between 7 October 2001 and 3 June 2003 and Northern Ireland (4b) between 26 July 1969 and 10 November 2005. The four phases and the lognormal-like distribution of the data as described afore for the CSM2 are clearly recognizable for both cases. Moreover, the complex nature of both (in the technical sense of the term), the CSM2 and real conflict, is highlighted by unpredictable outbursts of violence throughout the simulation and the duration of the two conflicts respectively.<sup>8</sup>

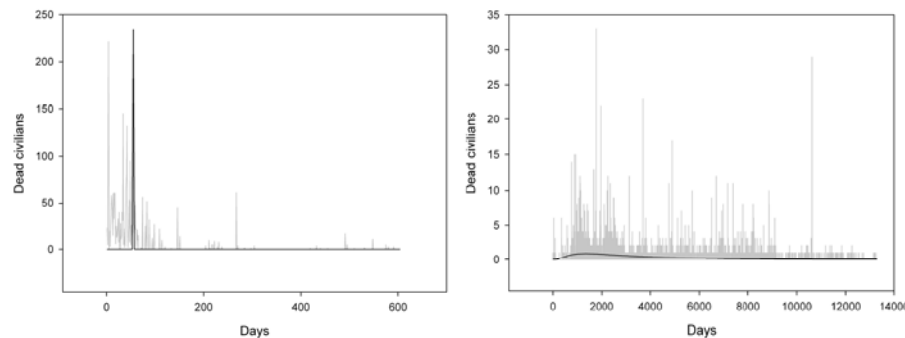
<sup>7</sup> For the Colombian context, Richani [24] calls this phenomenon „comfortable impasse“.

<sup>8</sup> Daily civilian casualty figures for Iraq and Colombia are similarly distributed [14].





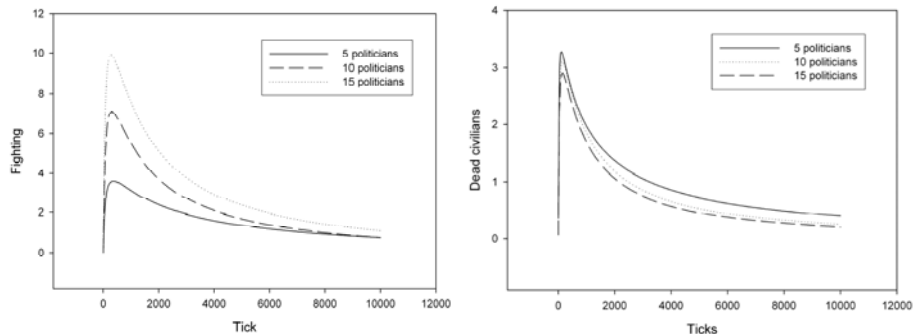
**Fig. 3a and 3b.** Left: Numbers of businessmen, fighting and dead civilians per tick. The dashed line indicates a lognormal curve fit of the number of dead civilians. Right: Evolution of the politicians’ power. (All statistics taken from one representative simulation run, cf. fig. 2).



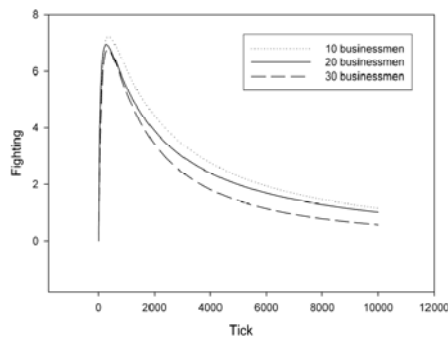
**Fig. 4a and 4b.** Number of dead civilians per day in Afghanistan (left) and Northern Ireland (right). (The data for Afghanistan stems from [13], the data for Northern Ireland from [29].)

The importance of a systemic viewpoint in conflict analysis has been already emphasized in the opening section and put forward by highlighting the effects of militarization and economization. Two further systemic effects are of interest in respect of this study and in regard of recent research. Figures 5a and b indicate that an increase in the number of politicians in the CSM2 leads to an increase in the level of violence measured in number of fighting per tick (fig. 5a) and a decrease in the number of dead civilians (fig. 5b). An increase in the number of politicians leads on one hand to more affiliated warriors who are able to fight and consequentially engage more often in interfactual fighting and it leads, on the other hand, to more safe havens for civilians. Circumstantial evidence “validates” these two findings. Interfactual fighting has significantly increased in conflict zones such as Afghanistan (after 1991), Chechnya, Iraq (2003) or Sierra Leone after the breakdown of the regime in power. Thus, the more fragmented a political topology is, the higher is the level of interfactual violence [11]. However, the cost of civilian lives has usually been highest in wars between two well-defined parties, such as in Afghanistan (1979–1989) Vietnam or the Balkans (1990s).

A number of recent publications have proposed the idea that contemporary conflicts are first and foremost driven by economic motives and causes – a paradigm that has been criticized by a variety of authors conducting case studies in such places as Liberia [9], Sierra Leone [25] or Somalia [4]. Neither is the CSM2’s ontology sympathetic to the “greed-and-grievance”-paradigm nor does its statistical output produce evidence to strengthen the “greed-and-grievance”-hypotheses. Figure 6 indicates that there is no obvious correlation between the number of businessmen in the CSM2 and the level of violence measured in number of fighting per tick in the CSM2.<sup>9</sup>



**Fig. 5a and 5b.** Impact of an increasing number of politicians on the frequency of fighting per tick (left) and the number of dead civilians per tick in the CSM2.



**Fig. 6a and 6b.** Impact of increasing number of businessmen on the level of violence in the CSM2 measured in number of fighting per tick.

## 5. Conclusions

The presented preliminary results generated by the CSM2 are counterintuitive insofar as they can be cross-validated [20] against reality, although they stem from a simple agent-based social simulation model driven by an ontology which is informed by evidence-based theory. The results indicate that contemporary conflicts are

<sup>9</sup> Note that the number of businessmen is dynamic and only its initial value can be defined.

partitioned into four phases – an organizational, an explosive, an abating and a lingering phase. The CSM2 also highlights the role of political organization in contemporary conflict and its effect on the level of violence: Paradoxically, an increasing number of political stakeholders in contemporary conflicts cause increasing violence by reducing at the same time the number of civilian casualties. In other words: The pursuit of their political interests by violent means triggers conflict and leads a great many of civilians into their dependence. Finally, the CSM2 suggests reconsideration of the “greed-and-grievance”-hypotheses. This is not to insinuate that contemporary conflicts do not have economic causes or motives – they obviously have –, but the relation between resources and violence is neither mono-causal nor linear.

As agent behavior and social structure needs to be explicitly formalized and modeled in agent-based social simulations, the CSM’s output suggests that the model’s structural and processual ontology captures an aspect of reality. It is therefore argued that contemporary conflicts are violent organized quarrels about material and social resources by means of neo-patrimonial behavior in an anomic context.

To corroborate the study’s findings, additional non-linear time-series and cluster analysis is requested in the near future.

The CSM2 is a simple, although not trivial model, that represents contemporary conflict in its most abstract form. It can be extended in a variety of ways and therefore qualifies to study a variety of phenomena in contemporary conflicts, such as the role of strategy in agent behavior or the role of cooperation and the emergence of (temporal) alliances amongst stakeholders.

**Acknowledgements.** I would like to thank especially Urs Luterbacher and Albert A. Stahel for comments. I gratefully acknowledge Shah Jamal Alam’s, Ruth Meyer’s and Bogdan Werth’s programming and modelling support.

## References

1. Allan, P., Stahel, A.A.: Tribal Guerrilla Warfare Against a Colonial Power. *Journal of Conflict Resolution*. 4 (1983) 590–617
2. Bak, P.: *How Nature Works: The Science of Self Organized Criticality*. Oxford University Press, Oxford (1997)
3. Bayart, J.-F., Ellis, S. Hibou, B.: *The Criminalization of the State in Africa*. Indiana University Press, Bloomington Indianapolis (1999)
4. Besteman, C.: Representing Violence and “Othering” Somalia. *Cultural Anthropology*. 1 (1996) 120–133.
5. Boero, R., Squazzoni, F.: Does Empirical Embeddedness Matter? Methodological Issues on Agent-Based Models for Analytical Social Science. *Journal of Artificial Societies and Social Simulation*. 4 (2005) <http://jasss.soc.surrey.ac.uk/8/4/6.html>
6. Cederman, L.-E.: Modeling the size of wars: From billiard balls to sandpiles. *Amer. Pol. Sc. Rev.* 1 (2003) 135–150
7. Collier, N., Hoeffler, A.: Greed and grievance in civil war. *Oxford Econo. Papers*. 4 (2004) 563–595
8. Durkheim, E.: *Suicide. A study in sociology*. The Free Press, New York [1897] (1951)

9. Ellis, S.: *The Mask of Anarchy. The Destruction of Liberia and the Religious Dimension of an African War*. New York University Press, New York (1999)
10. Epstein, J.: Modeling civil violence: An agent-based computational approach. *Proceedings of the U.S. National Academy of Sciences*. 3 (2002) 7243–7250
11. Geller, A.: *Macht, Ressourcen und Gewalt: Zur Komplexität zeitgenössischer Konflikte, Eine agenten-basierte Modellierung [Power, Resources, and Violence: The Complexity of Contemporary Conflicts, An Agent-based Model]*. vdf, Zurich (2006)
12. Godelier, M.: *The Making of Great Men: Male Domination and Power among the New Guinea Baruya*. Cambridge University Press, Cambridge, (1986)
13. Herold, M.W.: Appendix 4. Daily Casualty Count of Afghan Civilians Killed by U.S. Bombing and Special Forces Attacks, October 7 until present day. <http://pubpages.unh.edu/~mwherold/AfghanDailyCount.xls> (2003)
14. Johnson, N., Spagat, M., Restrepo, J.A., Bohórquez, J.C., Suárez, N., Restrepo, E.M., Zarama, R. From old wars to new wars and global terrorism. <http://personal.rhul.ac.uk/pkte/126/Documents/Docs/OldNewTerror.pdf> (2005)
15. Kaldor, M.: Introduction. In: Kaldor, M., Vashee, B. (eds.): *New Wars, Restructuring The Global Military Sector. Volume I: New Wars*. UNU World Institute for Development. Economics Research (UNU/WIDER). Pinter, London Washington (1997) 3–33
16. Marks, S.R.: Durkheim's Theory of Anomie. *Amer. J. Soc.* 2 (1974) 329–363
17. Médard, J.-F.: L'État patrimonialisé [The patrimonialised state]. *Politique Africaine*. 39 (1990) 25–36
18. Merton, R.K.: Social Structure and Anomie. *Amer. Soc. Rev.* 5 (1938) 672–682
19. Moss, S.: Canonical tasks, environments and models for social simulation. *Computational and Mathematical Organization Theory*. 3 (2000) 249–275
20. Moss, S., Edmonds, B.: Sociology and simulation: Statistical and qualitative crossvalidation. *Amer. J. Socio.* 4 (2005) 1095–1131
21. Outhwaite, W.: *New Philosophies of Social Science. Realism, Hermeneutics and Critical Theory*. Macmillan Education, London (1987)
22. Popitz, H.: *Phänomene der Macht [Phenomena of power]*. 2nd edn. Mohr Siebeck, Tübingen (1992)
23. Reno, W.: *Warlord Politics and African States*. Lynne Rienner Publishers, Boulder London (1998)
24. Richani, N.: *Systems of Violence. The Political Economy of War and Peace in Colombia*. State University of New York Press, Albany (2002)
25. Richards, P.: *Fighting for the Rain Forest. War, Youth and Resources in Sierra Leone*. The International African Institute; James Currey, Oxford; Heinemann, Portsmouth (1996)
26. Sayer, A.: *Realism and Social Science*. Sage, London Thousand Oaks New Delhi (2000)
27. Sheridan, J.E.: *Chinese Warlord. The Career of Feng Yü-hsiang*. Stanford University Press, Stanford (1966)
28. Sofsky, W.: *Zeiten des Schreckens. Amok, Terror, Krieg [Times of terror. Amok, terror, war.]*. S. Fischer, Frankfurt a.M. (2002)
29. Sutton, M.: An Index of Deaths from the Conflict in Ireland. Conflict Archive on the Internet (CAIN). <http://cain.ulst.ac.uk/sutton/> (2005)
30. Weber, M.: *Wirtschaft und Gesellschaft. Grundriss der verstehenden Soziologie [Economy and Society: An Outline of Interpretive Sociology]*. 5th edn. J.C.B. Mohr (Paul Siebeck), Tübingen [1921] (1980)