Executive Force: A Dynamic Model for Strategic-Level Decision Making in Politico-Military Conflicts

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Abstract

This paper presents a model with a *holistic* view on the forces governing a "typical" large-scale politico-military conflict. As such, the model could be used to highlight various consequences of national decision-making in real-life conflicts such as e.g. the USA-Iraq conflict, the Israel/Arab conflict and so on. However, the model itself is designed in a very simplistic fashion, so that it will never provide decisive solutions to any *specific* conflict – still it gives very general guidelines that may apply to any international security conflict. The model is currently under development, and a prototype has been tested on 74 students at the Norwegian Defence Staff College (FSTS). Students report that the model succeeds in focusing on the holistic view, the critical ability to see military and political means as an inseparable whole, and the importance of the decision-making group having a common understanding of the situation.

Key words: system dynamics, model, decision-making, experiment, military, political

1 INTRODUCTION

Decision-making in organizational and managerial contexts is a highly complex task. This has long been recognized (Simon, 1956; 1978). Most real-life situations require that the decision maker has acquired the skills of his profession through real-life experience. This is a far-from-trivial demand, when decisions and their consequences are (widely) separated in time and space. Repeated instances of what might appear to be the same problem, in reality differ on important characteristics, which only contributes to the difficulties people have when it comes to make valid and robust inferences.

These difficulties are also present in the typical military staff exercise, where a higher-level combat/conflict situation is simulated. This kind of exercise requires considerable resources and takes days or weeks to conduct. Replays to investigate alternative outcomes are just too costly. However, the only "real-life" operational experience most military officers will get during their career, is what they get through more-or-less realistic exercises.

The main obstacle in contemporary development for higher-level military training seems to be the desire to achieve the greatest possible technical detail and accuracy in the simulations that are to support such training. In practice, the creation of higher-level simulations has been regarded as a problem of integrating/aggregating as many lower-level (tactical) simulations as possible, and in real time. As a consequence, development budgets "explode", and the real learning remains with the development team and the application testers.

Minimalist Decision Training (MDT), which will be described in this paper, takes the opposite

"angle of attack". With this approach, the simulation model focuses narrowly on the problem at hand, which (for an operational or strategic commander) is usually related to the perception and handling of dynamic dilemmas, featuring aspects such as time lags, feedback and non-linearities. Most, if not all, of the technical detail concerning weapon platforms is just left out of the simulation model.

2   MDT CONCEPT

A minimalist decision trainer (MDT) is a very simple and pedagogically designed simulation-supported system for use in the training of higher-level commanders (both existing and to-be). The training focus is to build and rehearse the commander's ability to quickly form a mental image of a combat/conflict situation, and to intuitively comprehend what are the likely combined outcomes of the inherent dynamics governing the situation, and the decisions made to act upon the situation. This ability is required when it comes to making rapid decisions of high quality – essential for achieving success in (over-)complex and "dramatic" situations.

MDT is aimed at putting a commander or the command group in charge of own logistics and operations resources in a scenario. The scenario may contain any implied or explicit mission. The resources reflect a combined joint operation; typically the lower limit of resources will be less than a hundred units representing land, sea and air resources, with upper limit being less than a thousand. The representation need not be restricted to the military organization – political, psychological, economical, and legal means of exerting influence may also be included.

MDT belongs to a class of training solutions referred to as "Management Flight Simulators" (MFS) – a term invented at MIT's Sloan School of Management (Bakken et al, 1992). Instead of individuals flying a simulated aircraft, a management team "flies" the corporation, creating products that "fly in the marketplace" through making appropriate strategic, operational and tactical decisions. MDT represents the best of tabletop war games and MFS for its players: the operational level commander – or more typical – his associated command group.

Isaacs and Senge (1992) argue that microworlds used in a training context will alleviate many, if not most, of the so-called "barriers to learning" in dynamic environments. There is an apparent risk, however, that such tools – simplified as they are, and often to the extreme – could be misused. An example of such misuse could be to support short-sighted/narrow-minded views and policies, arising (more or less consciously) because of inaccurately formulated models or of misinterpreted feedback from the model.

3   PREVIOUS MODELS

Since Summer 2001, FFI and FIL have built and tested two simple prototype models for military operations. These are implemented at the Norwegian Defence Staff College (FSTS) and used as an educational tool.

Model 1 is designed for individual players, and no external operator is needed. The model simulates a deployment task, and the decision-level is strategic to operational. The whole game can be played in less than one minute, but the average time would be about two or three minutes. The player's mission is to deploy combat units and supplies, and the two deployment lines have different dynamic behaviors. One principle the player will learn from this game is to concentrate forces to pre-empt the enemy, who then will be deterred from deploying more units. The player will also learn the importance of allocating and balancing his resources in an appropriate manner (strategic logistics focus).

Model 2 (Bakken and Gilljam, 2003) is played by two command groups – or two single commanders – who act as opposing forces. The operation is high-intensity and is simulated at an operational to tactical level. The scenario depicts one nation's territorial attack on the other. As such, it conveys the view of a "classical" warfare situation. While having the advantage of being well known (at least in theory) to most players, this kind of situation appears less relevant today than it did 15-20 years ago. However, the main emphasis is of course on learning certain basic concepts, which to a great extent are context-free. Each player, or group of players, will make three types of decisions every simulated day: How many Ground Force units to employ at each combat area, and how many Cruise Missiles and Special Force units to support ongoing combat or to disturb transportation routes between combat areas. One game will take in the region of 1-2 hours and requires interaction with a graphical user interface in addition to the model itself.

4   EXECUTIVE FORCE

"Executive Force" is the latest model developed by FFI and FIL. The model presents a *holistic* view on the forces governing a typical large-scale politico-military conflict. As such, the model could be used to highlight various consequences of national decision-making in real-life conflicts such as e.g. the USA-Iraq conflict, the Israel/Arab conflict and so on. However, the model itself is designed in a very simplistic fashion, so that it will never provide decisive solutions to any *specific* conflict – still it gives very general guidelines that may apply to any international security conflict. The model is still under developing (this is the first version, and it has not been revised since the first (and only) full scale test), consequently the model will not be described in complete detail in this paper.

4.1   Scenario

Country A borders on country B, and the border area has a huge amount of natural resources. The C-people live in this area but mainly on the A side of the border. The two countries are given two different descriptions of the situation (about 2 written pages). Country A has received hints that the C-people are planning a liberty fight to establish their own state. Country A suspect that B are supporting the C-people to get their hands on A's natural resources, and that they also support the completely *unfounded* terror activities in the area. Country B, on the other hand, observes the C-people's *justified* struggle against the evil oppressors – country A. B fear that the inhumane conditions of the C-people will result in a disaster with a large number of refugees, unless something is done.

4.2 A model overview

The schematic figure below (figure 1) shows an overview of the model, from A's point of view. The model is symmetrical, and the structure is almost exactly the same for B (it only differs in the way the two countries are providing the financial income). The interference between the two countries is merely the different decisions taken by the other country and the military forces located in the disputed area (respectively Disp area A and B). Therefore, when this is added to the structure of country A (as shown in the figure), the overview is complete (when you bear in mind the symmetry). The figure shows the model's four main structures (the sub models): Military Force, Intelligence, Finances and Performance. The figure is just an overview of the model, and some parts of the model will be described in more detail later in the paper.
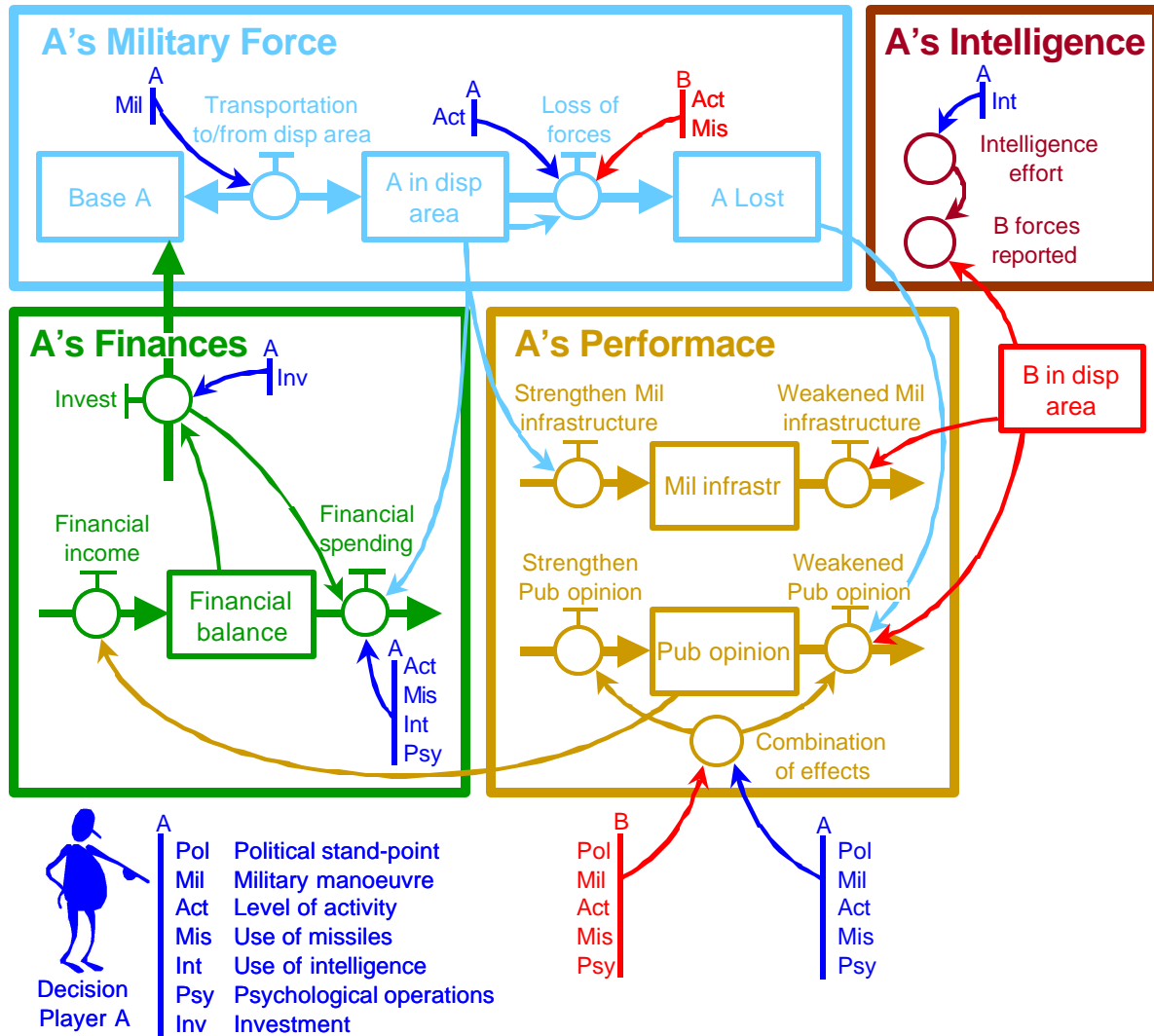

Figure 1   A schematic view of the model "Executive Force"

The main part of the notation in figure 1 should be quite familiar to most readers, but we have added a feature that hopefully will ease the understanding of this model. Decisions are marked by a pole, |, followed by the code for the particular decision(s), Pol, Mil, etc. The letter on top

indicates the country. The arrows between decision-poles, flows and converters indicate influence on this particular variable.

4.2.1 Model decisions and politico-military domains

Perhaps the most appropriate way to begin exploring the model would be to start with the politico-military *domains* represented in "Executive Force" and the range of decisions each player has to their disposal. There are five domains represented in the model, and each of these demands explicit decisions: political influence, military force, intelligence, psychological operations (psyops) and financial means.

In the model, the political means are quite simple. Almost as simple as "Either you're with us, or you're against us", but not quite. You choose to be *either* politically cooperative; which is equal to follow the laws set out by the international society, *or* politically independent; which means *you* decide what international laws and restrictions you should obey. The political standpoint is the only mean that is without any financial cost. However, there's no such thing as a free lunch, and the decision will be an important factor when calculating the financial income (which will be described later). Basically, the international society will only approve when you are following the ground rules, set out by the UN, and don't break any previous agreements. On the other hand, being friendly towards your long time enemy, and sharing important resources with neighbors, might not always be the safest way to keep your own population happy. It will also restrain your possibilities in the other domains since you are required to follow the international convention.

The decisions to be made in the military domain are more extensive than in the political domain. The player must decide what military maneuvers to conduct, which activity level the forces should have and consider the use of missiles. The *military maneuvers* are conducted with deployment of military forces from the home base to the disputed area as a percentage of total military capacity. If the capacity rises (through investments), more military personnel will automatically be sent to the disputed area. The same will happen if personnel at the front are lost, because the percentage has been reduced. There is of course a time lag from the decision is made (this goes for *all* the decisions) and implemented, due to information flow, but the deployment itself is also hassled with delays, and the delay is a function of number of personnel in transportation and extent of fighting going on.

The *force activity* tells the military forces what their main goal is; to actively/aggressively search for situations that need action (pre-emptive), or just defend when attacked. The military forces will only influence the military infrastructure if the aggressive instructions are the case. This also applies for any loss of military forces, except when *missiles* are used – that certainly will kill a lot of enemies, regardless the instructions. Missiles are sent (and effective) as soon as the decision is made (the only time delay being the information flow).

The players have a fixed amount of resources at their disposal for the use of intelligence (surveillance) and psychological operations. The decision is basically to allocate the resources between intelligence, friendly psyops (information operations) and aggressive psyops (deliberately

concealing the truth). By emphasizing one of these three tasks, the others become less effective. The intelligence will give the player more accurate information about the opponent's military maneuvers. The more money spent, the less noise will follow the intelligence report. Both the friendly and aggressive psyops will give you advantages in the public opinion. The friendly psyops is the less effective of the two, but on the other side you don't have to worry the campaign will backlash, due to exposure of "shady" operations.

The decision in the financial domain is merely to consider the need for investment, i.e., expansion of the military force (however, all the decisions in the other domains have implications on the financial balance, so one might argue that these decisions also should be included in the financial domain). There are two ways of consuming the financial resources: By *investments* (acquisition of extra military forces) and *operational costs*. The latter will be active as long as there is any military forces in (or in deployment to or from) the disputed area, or if missiles, intelligence or psyops is being used. Investment can give you great advantages in the form of increased military capacity, but it is a dangerous instrument. The time of "delivery" of extra military forces is very long, and the investment must be done way in advance. One should also keep in mind that both the military situation and your financial abilities could be dramatically changed when reinforcement finally arrives.

All you do in this model (except making political decisions) will trouble your financial balance, as can be seen in figure 1. Thankfully, there is a way to *raise* funds as well. Each day a fresh amount of finances in added to the balance as a function of the public opinion. And here is the main asymmetry in the model: A's fundraising is a function of the international public opinion, while B are dependent of the satisfaction of their own people. This might set off the two countries in different directions regarding their goal for the campaign.

4.2.2 Performance

So far, we have only discussed the different domains and the means to influence them. It's about time to consider what the players are supposed to aim for, what their goal should be. Well, to be correct; the goal is up to the players to decide (as will be explained later in the paper). But some obvious benchmarks would be the public opinion (both international and domestic), the military infrastructure and the financial balance. This should also include the opponent's situation, as well as their own. Although both participants must define their opponent's failure to be as important as (or equivalent with) their own success for the game to be referred as a zero-sum game, it has some zero-sum game characteristics. Not only can it be a goal in itself to weaken the opponent as much as possible – an impaired opponent is less likely to inflict damage on yourself.

Apart from the financial balance (which can be argued to merely be a mean to obtain other goals) the performance is, of course, described in the sub-models as A's and B's Performance, respectively. From figure 1 one can se that own military infrastructure will be strengthen by own military forces in the disputed area, and weakened by the opponent's presence in the same area. The forces must be at a certain level of activity to have an effect. To achieve any increase in own infrastructure (or reduction of the opponents), the own forces must be aggressive. However,

be ware of the extra expenses this will lead to – not to mention the reaction from the public opinion!

The public opinion is more complex than the military accomplishment (just ask George jr!). Firstly, it covers both the international and the domestic opinion. Second, it is affected (both direct and indirect) by most of the decisions that are made by *both* players. As if that wasn't complex enough, most of these decisions are combined to give an effect. This means, for instance, that a certain political standpoint can give both weakened and strengthened public opinion, depending on your military strategy. To be more specific: the international public opinion will be pleased if you announce that you are following the ground rules, but will be double angry if you are launching missiles at the same time (this will be described in more detail in the next chapter). In addition, loss of personnel will obviously affect the home opinion in a negative way.

4.3   Challenges for the participants

4.3.1   The core concepts

The model integrates the influence of all domains as a whole – this is only practical if each domain is "stripped" of technical detail and complexity. What remains are the core concepts:

- The decisions to be made (as thoroughly described earlier in the paper)
- The dilemmas presented (implicitly rather than explicitly)
- The resources involved (which have acquisition and operating costs as described in connection with the financial domain)
- How resources are combined to equip operations (e.g., how political and military means needs to be coordinated in order to achieve a good result, and that it can be more cost-effective to use a balanced mix of means, rather than maximizing the use of one single domain)
- The effects of applying resources on various operational/strategic "targets" (the importance of resisting the temptation of using all available means towards one single target, without considering that the goal may change during the campaign)
- The overall goal(s) to be achieved (there may be a hierarchy of goals and therefore be able to prioritizing between different goals that are *mutually attainable*, and willing to adjust the goals if necessary)

Since this just is a prototype, and changes may occur (both in the model design and in importance of concepts), only one core concept will be presented in more depth; the concept of combination of domains, described on the next page.

The operation types may have different time scales, cost and effect on the dynamics. Although the impact of each domain (structure as represented in model) may look simple when isolated, the complexity increases dramatically when integrated. Not to mention the resulting behavior! So, even if the participants are presented with the whole model (and think it's fairly easy!), the potential for misperception is great. They create a mental model that can be confirmed both by misinterpreted the schematic view of the model and (selected) actual incidents when playing.

Bakken and Vamraak (in forthcoming SDC-proceedings, 2003) describe this type of misperception in detail in another SDC-paper.

4.3.2   Combination of domains

In "Executive Force" there are several domains that combines in a way that the resulting behavior of the model differs from what one would intuitively expect. The sum of the results from two different decisions, made under the same conditions, *may* not equal the result from the two decisions combined. This is explicit implemented in the model. Two combinations of military and political domain will be discussed in this chapter: the players' political decisions and the relation between the political and military decision of each player.

Table 1, below, indicates the resulting behavior of different combinations of your *own* and the *opponent's* political decision (as you might remember, the two feasible political standpoints are cooperative and independent), where N and I are the immediate impact in respectively your *own* national and international public opinion (which will lead to change in the public opinion). The direction of change is given with one or more (stronger) plusses and minuses (0 if status quo). The table shows that both our own national and international support is slightly strengthened when both players are politically cooperative (cell number 1).

		Opponent's political standpoint	
		Cooperative	Independent
Own political standpoint	Cooperative	1 $\quad N^+ \quad I^+$	3 $\quad N^- \quad I^+$
	Independent	2 $\quad N^{++} \quad I^-$	4 $\quad N^0 \quad I^{--}$

Table 1   *Change in national (N) and international (I) public opinion at different*
              combinations of own and opponent's political standpoints

What would then be the incentives to move from this favorable position (for both players)? If you choose to be independent, thus move to cell 2, your national popularity will be strengthened more rapid than before. This is a result of your country benefiting in negotiations with your "naïve" neighbors. Obviously, your international support will decrease as long as this standpoint stands firm. This could still be a wise thing to do if your goal is domestic success or you want to decrease the opponent's domestic support – as he obviously will end up in cell number 3.

Given the mechanism described above, your opponent would now be located in cell number 3. In this cell (when you are cooperative and the opponent is independent) the national public opinion will not thank you for being soft with a opponent who's political standpoint are known as anything but cooperative. The international society, however, is happy as long as you cooperate. Your opponent could decide to stay in this position (3) or change his political standpoint, hence move to cell 4 (you would then move from 2 to 4). By doing that, his declining national support would halt since he is standing up politically, but his international situation will go from fair to horrific as a result of the fact that *neither one* of you are very concerned about the international law. Whether this is a good move or not depends on his goals, but your situation will surely worsen both domestic and internationally – and that might be a good enough reason for him!

To summarize the mechanism for going from cell number 1 to 4: Participant A discovers that he is better off braking any bonds with B, and a few days after he will have achieved what he aimed for (despite some loss of international support). After a while it is obvious to B that he has placed him self in the worst possible position, and is forced to take on an independent standpoint. Both players have gone from slowly gaining both national and international support to respectively status quo and rapidly declining. The observant reader should have recognized the prisoner's dilemma (Binmore 1992) by now. Although this isn't a "real" Prisoner's Dilemma, it has many of the same elements (you don't know what decision the other participant is going to make, there is a short-time reward for "stabbing" your opponent and multilateral cooperation is the long-term win-win outcome, but is unstable on the short term).

The combination between the political and military decision of each player is another important relation in "Executive Force", but it is much simpler than the combination of political standpoints (as described above). If political cooperation and military activity (use of use of missiles, psyops or other military force) are combined, the player is punished by the international public opinion. They see this combination as an indication of your double agenda – you declare your will to cooperate, but fail to carry it through. The more military active you are, the longer is the fall on the Gallup.

5   PRACTICAL EXPERIMENT

5.1   Data collection

During one day in January 2003, a total of 74 students (officers) at the Norwegian Defence Staff College (FSTS) participated in a training program with the model "Executive Force" as the primary "object of study". In the morning – prior to the playing of the model – a brief of the game scenario and rules were given to all officers in a plenary session (45 minutes). In the afternoon, a de-brief was given (30 min). The de-brief included a mediated discussion of "lessons learned", as well as an opportunity for the best performing team to present their plan and experiences. The description of the game and the scenario was handed out along with the pre-brief. As can be seen in the abstract of the scenario (described above), there are obvious possibilities for misunderstandings between the two teams as a result of the two descriptions different viewpoint – even though *the facts* are exactly the same in both descriptions.

As communicated to the students, the purpose of the game was to make participants aware of the special conditions that a two-sided game may induce, with focus on illustrating the differences between a static and a dynamic decision world. This includes among others: to experience the dynamics that arises between the actors; the importance of knowing the "battlefield" and understand the situation; and experience the kind of problems that an imperfect situational comprehension may lead to.

The participating officers ranked (almost exclusively) from Major to LtCol, and had therefore considerable professional experience from the Norwegian Armed Forces. All three services – Army, Navy and Air Force were represented in almost equal proportions. Being Norwegian officers (with a couple of exceptions) at this level, it is unlikely that any of them had experience from "sharp" operations, however.

Immediately following the de-brief, the officers were instructed to individually complete a questionnaire. There were 34 questions, with answers to be marked on a six-point "Strongly disagree – strongly agree" scale. The survey was anonymous, even though team number, rank and service would have to be indicated. The questions encompassed all kinds of aspects somehow related to the "appropriateness" of using "Executive Force" as an exercise and training instrument. The answers we consider here, are those related to how well the model represents the principles of crisis management (derived from maneuver principles used in FSTS).

The students were distributed to eight teams, thus there were 9-10 officers per team. No instructions or restrictions were given on to how to organize teams. Observations of teams under play indicate however that few teams sought to divide tasks between them – usually, all members on a team would take the perspective of operational commander. School instructors and managers also sporadically observed the teams while playing – which is common.

A team would play the model for one day. First one game before lunch, then a second after lunch. Before each game the teams wrote down the goal(s) for their campaign. As mentioned before, this was all up to the teams to decide (based on the background of the scenario), and any changes in these goals should be accounted for after the game. In the first game the decisions of all domains except the financial domain were available to the players. The subsequent game was played with the possibility of investing in extra military forces as well as making informal decisions. These decisions could be verbal or written in the form of threats, negotiation or other; only the imagination sets the limits. The model was re-initialized between games, so that results on one game would not have impact on following games. There was no strict time limit on playing. However, the teams eventually managed to make decisions in very short time, using less than ten minutes to plan and decide for the three-day decision period.

5.2   Analysis and results

The data collected cover, among others, officers' individual ratings (N=59 respondents) of how well they believed the model "Executive Force" represented certain principles of crisis management. The actual question was worded as an assertion: "The following factors or principles had significant impact on operational outcome:" [followed by list of factors]

#	Principle	Scale
1	Understanding the opponent's intention(s)	
2	Concealing own intention	
3	Unpredictable/unexpected behavior	*1=Strongly disagree*
4	Rapid implementation of plan	*2*
5	Coherence of political and military means	*3*
6	Rapid thinking	*4*
7	Holistic perspective	*5*
8	To co-operate if the opponent chooses to co-operate	*6=Strongly agree*
9	Long-term perspective	
10	Common understanding of the situation	

Table 2   Factors (principles) in questionnaire.

Answers were marked on the provided 6-point "Strongly disagree –strongly agree" scale, one scale for each principle. For each principle, we take a rating of more than 3.5 (the "critical point") to indicate that the principle in question is believed by the player to have a strong impact on outcome of operations. It should be emphasized that no direct mention of "principles of crisis management" was made in the questionnaire.

#	Principle	Rating (std dev)
1	Understanding the opponent's intention(s)	4.2 (1.2)
2	Concealing own intention	4.4 (1.1)
3	Unpredictable/unexpected behavior	4.2 (1.2)
4	Rapid implementation of plan	4.5 (1.0)
5	Coherence of political and military means	4.5 (1.2)
6	Rapid thinking	4.3 (1.2)
7	Holistic perspective	4.5 (1.0)
8	To co-operate if the opponent chooses to co-operate	3.7 (1.4)
9	Long-term perspective	4.5 (1.0)
10	Common understanding of the situation	4.7 (1.0)

Table 3   Principles and their ratings.

The analysis shows (see Table 3) that all principles except number 8 rated in the range 4.2-4.7, with standard deviations ranging from 1.0 to 1.2. Principle 8 rated 3.7 with standard deviation 1.4. This is however, still above the critical level, and the slightly higher standard deviation indicates that this principal had the most divergent understanding. Overall, the relatively low standard deviations suggest that the officers are in strong agreement, and shows in essence that "Executive Force" to a large degree fulfils the ambition of representing principles of crisis management.

The participants were also asked to rate their degree of satisfaction with the model. The score on the statement "The Staff College should use this kind of game for training" was 4.0, with standard deviation 1.3. This could indicate that participants were convinced of the game's usefulness as a pedagogic instrument. The result is even more interesting knowing that the ratings for *realism* were below the critical point (2.8, standard deviation 1.1) – beared in mind that realism never was an objective for this model.

6   CONCLUSIONS AND FURTHER MODEL DEVELOPMENT

6.1   Experiment and testing

So far, prototypes of three simulation models for operational and strategic learning have been tested with great success at the Norwegian Defence Staff College, and are due for further testing at other military educational organizations as well as operational commands. The pilot users (staff, instructors and students) report a high degree of satisfaction with the models as exercise environments. In a post-exercise survey participants indicated that ten out of ten suggested principles of crisis management were believed to have substantial impact on operational outcome.

The experiments showed that the combinatory effect of the different domains did play a central role in the outcome of the conflict. Even if the students were well aware of these effects, they were not able to move the focus from their own "world" to the "world" that incorporated the opponents. When their political decisions suddenly gave a different result than earlier in the game, they tended to blame "strange mathematics in the model" or "calculation errors" rather than their own neglect of their opponents.

Despite the overwhelming complexity – is the answer to the "Executive Force" conflict actually quite simple? Is there a "non-technical" decision that could have lessened the tensions between the parties? None of the 8 groups in the FSTS-experiment tried to figure out how the opponent saw the conflict. No meetings were arranged to discuss the different views on how the conflict was initiated in the first place. Everybody automatically assumed that their interpretation was the only correct one. And when both sides assumed that their cause was the only justifiable, a peaceful solution was not easy to reach.

6.2   Further work

The introduction a "*conflict-indicator*" to "Executive Force" has been discussed. The indicator would affect the outcome of political means: a high degree of conflict will demand different decisions than a situation of no conflict (this is only implicit in today's version of the model). The political means will again change the nature of the indicator – in a way that evaluation of forthcoming decisions will change. This is a mechanism that would certainly add more dynamic complexity, and one question must surely be asked before adding any complexity: have we already reached the limit of the students' ability for dynamic complexity?

A third player could bring more life into the model and create interesting situations. This would add even more dynamic complexity to the model, and the (two other) players have to consider additional uncertainty: What are the goals of the third player? What did he do – and why? Is he taking side – and for who? The third player could be UN, the G-people, a "God" that can make thing happen, etc.

FFI and FIL has developed a more military focused model within the same minimalistic concept as "Executive Force", which considers a conflict beyond a diplomatically solution ("Commander's Quest"). To couple these two models together with a suitable scenario should be interesting, and not very difficult. The change in the different dynamic aspects and scenarios

can then be of a greater magnitude than would be possible within one single model.

"Anaconda" and "Strategos" are two forthcoming models from FFI and FIL. The first purely focusing on logistic operations on a high level of command, and "Strategos" simulating investments and transformation in the military defence structure in a 20 year perspective.

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