

A National Contribution to Peace Operations employing a Comprehensive Decision Support Model

(A tool for decision-makers and planners)

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1. Introduction

Questions of whether, why and how a nation should contribute to peace operations (PO) have been relevant ever since their introduction in 1948, when the United Nations Security Council (SC) authorized a UN peacekeeping (PK) mission to monitor the Armistice Agreement between Israel and its Arab neighbours.¹ After the end of the Cold War, with a radically changing geopolitical environment, the number of UN-led missions (as well as those authorized by regional organizations and coalitions) increased dramatically from a total of 18 during the Cold war period to 53 in its aftermath.²

By the end of 2018, more than 144 000 personnel were serving in 60 active multilateral peace operations, out of which more than 95 000 were serving in 14 UN missions³, and some 49 000 in other non-UN multi-lateral peace operations. These latter were led by regional organizations and alliances or by *ad hoc* coalitions of states.⁴ Thus, with a growing demand for the deployment of competent, specialized forces, it is hardly surprising that the UN High-Level Independent Panel on Peace Operations, in its 2015 Report, pointed out that: “In the face of a surge in demand over the past decade, the (UN) Organization has not been able to deploy sufficient peacekeeping forces quickly and often relies on under-resourced military and police capacities”.⁵

Peace operations have not simply changed in scope, but have also changed in character, morphing from traditional Cold War type missions to more complex multi-dimensional missions. Cold War missions were essentially *military*, deployed in buffer zones and with the task of observing, monitoring and reporting on the implementation of ceasefire in order to create preconditions for follow-on peace talks.⁶ Post-Cold War missions tended, on the other hand, to

NOTE: Views expressed in this article are those of the authors and do not necessarily represent those of the national institutions to which they belong or to the journal Acta Morphologica Generalis.

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¹ The United Nations (2019a).

² More on UN History on <https://peacekeeping.un.org/en/our-history>.

³ The United Nations (2018).

⁴ SIPRI (2019).

⁵ The United Nations (2015).

⁶ The United Nations (2008), p. 21.

deploy mixed-military, police and civilian capabilities for the implementation of a comprehensive peace agreement.⁷

Taking into account these global geopolitical changes and the growing demand for the deployment of multi-purpose capabilities within POs, we pose the following question: *What factors do national decision-makers and planners need to take into account when considering whether to deploy personnel in peace operations?*

To answer this question, this article will present a prototype *decision support model* (DSM) that was developed by one of the authors (Shukurov) as part of his doctoral thesis. The model, which is intended to be *generally applicable*, was implemented using the method of General Morphological Analysis and is based on the following eight “key factors” influencing such a national decision process:

- International legitimacy
- Types of peace operations
- Associated tasks and required capabilities
- National security goals
- Existing mechanisms to achieve national security goals
- Financial resources
- Casualty risks
- Possible negative consequences of participation

We will begin by elaborating and justifying the use of these particular factors for the development of the DSM. This will be followed by a short presentation of General Morphological Analysis (GMA) as a non-quantified modelling method, and then a detailed description of how the DMS was constructed employing this method. Finally, we will test the model by providing examples based on a number of cases or scenarios.

2. National Contribution to Peace Operations – Possible Motives and Influencing Factors

International legitimacy: As per the UN Charter, the SC has been given the primary responsibility for the maintenance of international peace and security.⁸ In order to carry out this mandate, and based on Chapters VI, VII and VIII of the Charter, the SC can impose a number of measures, including the deployment of peacekeeping forces. Chapter VI provides the basis for measures related to “*Pacific settlement of disputes*”; Chapter VII deals with measures and actions pertaining to “*Action with respect to the peace, breaches of the peace and acts of aggression*”; and Chapter VIII offers the legal basis for “*Regional arrangements*”. Examples of such “arrangements” include the US-led coalition in Afghanistan in 2001 and the French-led intervention in Mali in 2013. Also, agencies such as NATO, EU and AU can be involved in the maintenance of international peace and security which are in line with principles given in Chapter I of the Charter.

⁷ Ibid, p. 22.

⁸ The United Nations (1945), p. 7.

Although UN PKOs are not explicitly mentioned in any of these chapters, they have traditionally been related to Chapter VI, which was predominantly the case during the Cold War. However, after a number of unsuccessful interventions by UN missions after the Cold War – which, among other things, was caused by the fact that the intervening forces did not have an adequate mandate to respond to complex and volatile operational environments – the SC has adopted the practice of authorizing “use of all necessary means” under Chapter VII for the whole mission. Alternatively, it can authorize a “robust mandate”, which sanctions the use of force for the protection of the mandate at the *tactical level*, which could be limited in time, space and circumstances⁹ (e.g. protection of civilians or support/establishment of public order in the absence of a functional state).

The recently published “Leuven Manual on the International Law Applicable to Peace Operations”¹⁰, prepared by a group of international experts, provides a comprehensive account of the legal basis and requirements for peace operations:

“Every PO requires a mandate to provide legal basis for the operation and set out the objective and legal and operational parameters which govern the operation. A mandate can be issued by a competent international organisation or by a Host State government inviting or consenting to a Peace Operation conducted by a competent international organization on its territory, and in most cases will be a combination of both.”¹¹

The UN always operates on the basis of a mandate issued by the Security Council in addition to consent by the Host State. Most peace operations which are conducted by regional organizations or arrangements will also operate on the basis of a SC mandate in combination with Host State consent. However, in some cases, notably when an operation does not involve the proposed use of force beyond self-defence, a mandate will not be sought for the SC. In these cases, the consent of the Host State and related agreement (s) between the Host State and the regional organization or agreement conducting the Peace Operation will serve as mandate.¹²

In the case when the Host State grants consent, a mandate issued by the SC will serve as an additional legal basis and will correspond to and complement such consent. However, when a mandate is adopted under Chapter VII of the Charter, it will prevail over any terms set by the Host State in consenting to the operation.¹³ Moreover, the authors of Leuven Manual emphasize that, in the absence of consent by the Host State, a mandate issued by the SC under Chapter VII of the UN Charter is a strict *legal requirement* for the deployment of troops and other personnel onto a State’s territory to conduct PO. This rule applies irrespective of whether the operation is conducted by the UN directly, by a regional organization or arrangements, or by individual States operating independently of the UN or any other organization, but with the authorization of the SC.¹⁴

⁹ The United Nations (2008), pp. 34-36.

¹⁰ Gill *et. al.* (2017).

¹¹ Ibid, p.27.

¹² Ibid.

¹³ Ibid, p.29.

¹⁴ Ibid, p.30.

Types of peace operations (& their associated tasks and required capabilities): Since doctrinal terminology related to peace operations differs somewhat between NATO¹⁵, EU¹⁶ and AU¹⁷, for the purpose of this article we use a classification provided by the UN. This is because it is more generally applicable and can serve as a common conceptual ground from which the above-mentioned regional agencies derived their peace operation doctrines (with minor differences of interpretation). Therefore, we suggest to those involved in a national decision-making process to take a closer look into detailed doctrinal specifics when considering deployment of their national forces under the leadership of a regional security organization.

As per the latest UN doctrinal publication on peace operations¹⁸, the following types of operations are distinguished:

Conflict prevention: the application of diplomatic measures and activities in order to prevent escalation of disputes into open conflict;

Peace-making: aims to stop ongoing conflicts by diplomatic activities in order to achieve a peace agreement among parties in the conflict;

Peace-keeping: includes multi-dimensional activities by military and civilian capabilities in order to implement a peace agreement, based on the consent of the parties;

Peace-enforcement: involves – under approval of the UNSC – coercive measures, without consent of the host nation/parties in the conflict, in order to restore international peace and security, including use of the military force;

Peace-building: a long-term and complex process aiming at creating preconditions for sustainable peace, addressing the deeper structural causes of the conflict by a comprehensive approach.

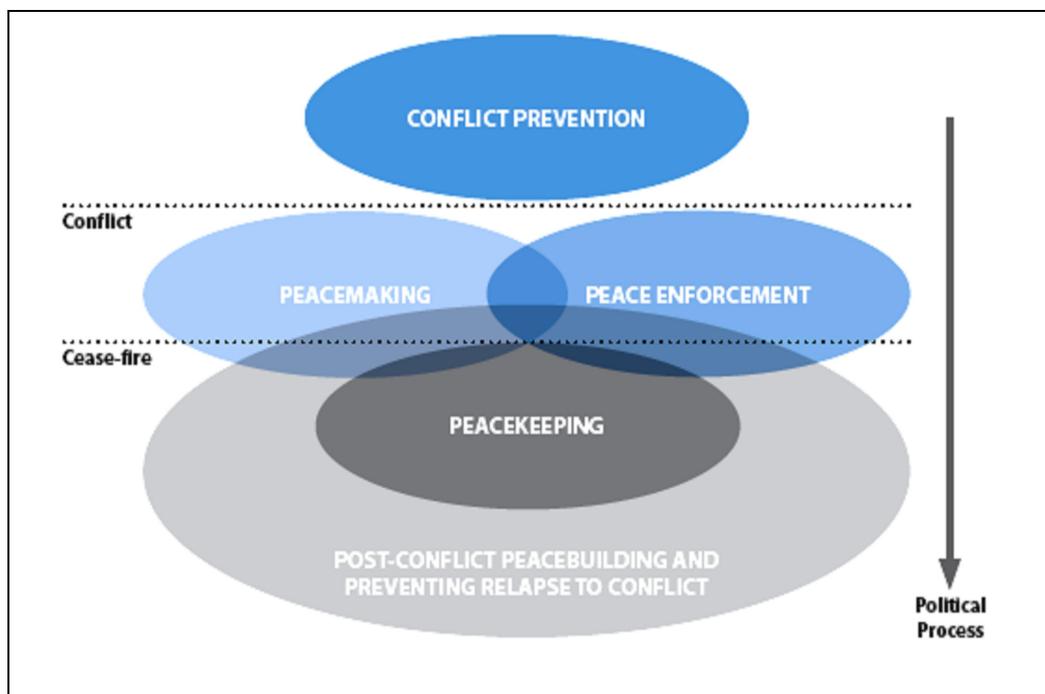


Figure 1: Spectrum of Peace and Security Activities of the UN¹⁹

¹⁵ NATO (2014).

¹⁶ European Union (1993).

¹⁷ African Union (2002).

¹⁸ The United Nations (2008), pp. 17-18.

In order to contribute to the achievement of mission objectives, the military component in a multi-dimensional operation must be able to carry out a number of tasks.²⁰ Some of these tasks are cross-cutting and can be executed in any type of peace operation, while others are specific to a particular type of PO. The following list of military tasks is not exhaustive and can be adapted depending on the mandate of the specific mission:

- Early warning
- Preventive deployment
- Conflict containment
- The forcible separation of belligerent parties
- The establishment and supervision of protected and safe areas
- Freedom and denial of movement
- Enforcement of sanctions and embargoes activity
- Enforcing No-fly zones
- Supervision of ceasefires and peace agreements
- Support to the protection of civilians
- Force protection and safety
- Interposition
- Observation and monitoring
- Transition assistance
- Humanitarian aid
- Maritime security operations

Depending on the mission and operational environment, the execution of military tasks in multi-dimensional peace operations requires a number of different capabilities, including military police, de-mining units, logistics, intelligence, field health installations as well as land, sea and air capabilities.

National security goals: As pointed out by Kathman & Melin²¹, the decision by a nation to provide a military contribution to a given peace operation is mainly driven by “*state centric interests*”, where the post-Cold War trend has seen powerful countries (e.g. US, France and Germany) providing funding or hi-tech equipment, and less powerful states providing troops. Thus, analyzing the latest Country Contribution Ranking to UN peacekeeping operations, we find only one European democracy among the first twenty nations providing troops.²²

Both theoretical and practical considerations point to different motives for states deciding to contribute to peace operations. For instance, Zhengyu & Taylor²³, in analyzing Chinese contributions to UN peacekeeping operations, maintain that for China the key motives are: 1) influencing the political situation in the area of the deployment of its forces, 2) influencing the balance of power at the UNSC, 3) enhancing one’s own reputation globally and 4) securing

¹⁹ The United Nations (2008), p. 19.

²⁰ The most comprehensive list of military tasks on peace operations is given in AJP-3.4.1. (2014), pp. 4-2 to 4-10.

²¹ Kathman & Melin (2017), pp. 150-162.

²² The United Nations (2019b).

²³ Zhengyu Wu & Taylor (2011), pp. 137-154.

international legitimacy for its strategic presence in Africa. The authors also discuss how China sets several legal constraints by its own legislation and foreign policy. These constraints are reflected in the fact that China has been reluctant to engage in peace enforcement operations, or to support these operations in the SC, since no host-nation consent is necessarily required. In doing so, China is strongly supporting the principle of state sovereignty (given by the UN Charter) and the right to deal with one's own internal issues, even forcefully if need be.

Similarly, looking into the case of Brazilian peace operations, Alsina²⁴ argues that, though its Grand Strategy does not explicitly reflect national security goals related to participation in peace operations, these goals are articulated in other policy documents. These show Brazil's intent to: 1) demonstrate willingness and capacity to contribute to the maintenance of international stability; 2) project a positive image of the country, preferably by persuasive means; 3) increase the country's influence not only in the UN system, but mainly in the host state and the region where the peacekeeping operations are conducted, including promotion of Brazilian economic interests; and 4) show solidarity with the peacekeeping mission host country.

On the other hand, in the case of most of the "top ten" *troop-contributing nations* (mainly developing countries in Africa and Asia), Kathman & Melin²⁵ argue that here the motives are mainly aimed at: 1) economic and financial benefits from the UN participation reimbursement system; 2) the maintenance of high readiness in military forces; and 3) that the opportunity to send forces out-of-country can lessen the risk to ruling elites of a military coup.

However, if we take the case of a relatively small Western democracy such as Portugal, which is also a member of a regional security organization (NATO), then we find different reasons for its participation, an particularly in UN peacekeeping missions. Ceu Pinto points out that:

"Portuguese participation in peacekeeping missions has been seen as a vehicle for strengthening Portugal's position in the world: the involvement under the flag of international organizations raises the profile of Portuguese foreign policy and diplomacy."²⁶

Furthermore, the same author argues that military involvement in peace operations becomes *de facto* an instrument of foreign policy with the aim to:

"...Obtain and maintain influence and visibility within the United Nations, NATO and the European Union; strengthen Portugal's position in the world's most important political decision structures; give increased legitimacy to request the involvement of the international community, particularly the United Nations, in areas that are important for Portugal and encourage candidatures to high level posts in international structures".²⁷

Thus, as with many other stable and developed democracies, the projection of state power and foreign policy is a comprehensive and well-organized motive for Portugal. It is also worth noting that a Portuguese national currently holds the position of Secretary General of the UN.

²⁴ Alsina (2017).

²⁵ Kathman & Melin (2017) 61, pp. 150–162.

²⁶ Ceu Pinto (2012), pp. 65-77.

²⁷ Ibid.

Another vital incentive for nations to contribute to peace operations concerns the reform of their own defence establishments (either on a more comprehensive/institutional scale or in more limited-field specialized scope). In this context, they can commit themselves to different levels of partnership with international organizations, using different programs that these organizations offer within the framework of cooperation with a partner country.

In this regard, NATO has a comprehensive approach to cooperation with partner countries, providing tailored cooperation packages.²⁸ Depending on a partner country's security goals and level of ambition, it has developed a number of tools and mechanisms in support of e.g. interoperability, capability-building and supporting defence and security-related reform.²⁹

In the case of the United Nations, its "Peacekeeping Capability Readiness System" (PCRS) is aimed at establishing a predictable and dynamic process of interaction between the UNHQ and Member States for ensuring readiness and timely deployment of quality peacekeeping capabilities.³⁰ It also seeks to provide a single window for the selection of Troop Contributing Countries (TCC) for deployment.³¹ However, existing UN mechanisms in regards to defence reforms are limited to the preparation of the units of TCCs for the peacekeeping operations and practical experience in the field. They do not provide comprehensive defence related packages for defence reform or other transformation efforts for the TCCs.

In the case of other potential partnership organisations, such as the Organization of American States (OAS), the African Union (AU), the European Union, and the Collective Security Treaty Organization (CSTO), there is likewise no evidence of mechanisms/tools that provide comprehensive defence reform for its partners.

To sum up, we can conclude that the participation of a nation in peace operations is to a large extent driven by national interests articulated by foreign and security policy. Those interests can include: protecting economic interests; gaining financial benefits (from the UN participation reimbursement system); contributing to the maintenance of regional and international peace and security; projecting a positive image of the country; supporting national defence reforms (either as a comprehensive/institutional or limited-field specialized scope); training and maintaining readiness of military forces; strengthening the country's position in the world's most important political and security organizations; influencing the political situation in the area of the deployment of peacekeeping forces; and enhancing national reputation.

Existing mechanisms to achieve national security goals: The surge of UN peacekeeping missions after the end of the Cold War (one of the largest having taking place in the Western Balkans, which was predominantly manned by troops from modern western Europe-type militaries), can be seen as a result of a change in national interests and priorities, with greater focus on regional security organizations, primarily EU and NATO. This change could be rooted in the fact that, since the conflicts in the Western Balkans were settled through relatively

²⁸ NATO (2018).

²⁹ NATO (2016).

³⁰ United Nations (2019c), p 3.

³¹ L Gill *et. al.* (2017), p.16.

comprehensive peace agreements, there was no imminent threat to the stability of the EU members bordering upon the region.

Secondly, collective action by NATO members in Afghanistan in 2001, and then the US-led coalition war in Iraq in 2003, influenced foreign policy priorities in the “western world”. In light of this, Kathman & Molly argue that “This is likely the product of powerful Western nations scaling back their contributions ... where less developed, weaker, and less secure countries have entered the void that the West has left.”³² In addition to this, during the past two decades, powerful nations (e.g. the US and Russia) have carried out *individual interventions* in order to achieve national security objectives.

In conclusion, depending on national security interests, available resources and the geopolitical context, a nation might decide to take part either in a UN peacekeeping mission, a mission led by a regional security organization, within *ad hoc* coalitions, or individually.

Financial resources: Another important factor influencing a nation’s decision to take a part in peace operations is the *cost* of such an engagement. As per the results of research conducted by Gaibullov et. al., indicators show that “As a country’s GDP per capita increases, the number of peacekeepers deployed to UN-peacekeeping operations declines”.³³ These findings show that richer countries are more inclined to participation in peace operations led by regional security organizations (NATO and EU), where nations participate by financing their own operations and by financial burden-sharing for common capacities and capabilities (i.e. surveillance, air defence, strategic air-lift assets etc). Furthermore, in protection of their own interests, countries which are considered to be regional or even global players conduct operations either alone or with a few coalition partners, thus taking over most of the financial burden.

On the other hand, Gaibullov *et. al.* argue that “Over the sample period (1990-2012), we find that UN peacekeeper contributors are more motivated by money-making personnel deployments than by other contributor-specific gains, such as regional stability”.³⁴ Therefore, in the case of the “top ten” troop-contributors, which are mainly “Third World countries”, having troops on a UN peacekeeping mission can boost their own defence budgets, since the funds reimbursed from the UN per deployed soldier, split 50%-50% between the soldier and the contributing nation, means that the soldier would still earn more than serving “at home”.³⁵

In sum, before deploying troops on peace operations, and depending on a country’s foreign policy goals and GDP, decision-makers should consider the financial implications of such move, e.g. if the state should go for financial burden sharing, for assistance through the UN reimbursement, or for providing and financing its own resources.

Casualty risks: The risk of a high casualty rate can be a decisive factor for whether a nation would participate in a particular peace operation. Historically, there have been a number of cases in which a high casualty rate has led to countries withdrawing from peace operations (e.g. the

³² Jacob & Melin (2017), pp. 150-162.

³³ Gaibullov et. al. (2015).

³⁴ Ibid.

³⁵ The United Nations (2014).

US from Somalia in 1992 and a number of nations withdrawing from Afghanistan before the closure of the NATO ISAF mission in 2014). Therefore, decision-shapers, when going through a planning process, should take into consideration historical lessons learned, potential future threat developments and the type of operations envisaged that would have an impact on the casualty rate. Most importantly, one needs to consider whether an estimated causality rate is worth the political objective that the national aims to achieve by deploying its forces, as well as taking into consideration the “socially accepted” rate of casualties.

Negative consequences of participation in peace operations: While many POs – particularly those conducted by the UN under Chapter VI – may have low potential negative social, political or economic impacts on troop contributing nations, high-profile Chapter VII UNSC authorized (and in some cases *not* authorized) “peace operations” can pose high potential negative impacts for participating nations. One of these (as mentioned above) is the *social reaction* to high casualty rates by broad sections of the participating nation’s population. Another can result from attacks on the participating nation’s information and cyber domains.

“The increasing use of cyber attacks by non-state actors to further their economic, political and other interests, and the present problem of clear accreditation of the originators of cyber activities, makes it increasingly hard to identify and counter such threats...terrorist proxies are increasingly using cyber capabilities to augment their attack capabilities”.³⁶

Also, overexposure to the cost of participation can also have a negative influence on the domestic economy, particularly in high intensity non-UN operations. In the case of the US presence in Afghanistan, expenditures have been estimated at more than 975 billion dollars, which is the second most expensive war in US history (after WWII). In addition, Kimberly Amadeo points out that:

“Companies, particularly small businesses, were disrupted by National Guard and Reserve call-ups. The economy also has been deprived of the productive contributions of the service members killed, wounded, or psychologically traumatized”³⁷.

Finally, engagement in such operations can have negative economic, political and *diplomatic* consequences due to e.g. third party nations imposing economic sanctions, the loss of international image and/or diplomatic isolation.

3. Decision Support Modelling with General Morphological Analysis

In light of all of these factors, our aim is to propose the development of a computer-aided Decision Support Model (DSM) – both for political and military leadership, and for civilian and military planners – in order to better facilitate the decision-making process concerning national participation in peace operations. However, before describing the modelling process itself, it is instructive to provide a definition of a (scientific) model, as this is applied to the modelling method employed here, i.e. General Morphological Analysis (GMA).

³⁶ Bachmann & Gunneriusson (2014).

³⁷ Kimberly (2019).

Ritchey³⁸ argues that there is no concise and unanimously agreed upon *general definition* of a scientific model, but defines three conditions as necessary and sufficient for a *minimal definition*. (Note that all of the following text in Section 3 is quoted from the referenced articles in footnotes 39-46, with the permission of the author.)

“1) A model must contain two or more mental constructs that can serve as variables, i.e. dimensions which can support a range of states or values. [In morphological modelling we call these the model’s parameters. We define a parameter as being one of a set of measurable factors that define a system and determine its behaviour, and which can be varied in an experiment – including a *Gedankenexperiment*.]

2) One must be able to establish relationships (causal, statistical, logical, etc.) between the states or values of the different parameters, which determines the topological properties of the model and its overall behaviour.

3) Inputs can be given, and outputs obtained. [In morphological modelling, this is achieved by (temporarily) designating one or more parameters as independent variables (inputs) and realizing the results on the remaining variables (outputs)].”

“GMA is a general method for structuring and analyzing complex problem fields which are inherently non-quantifiable, contain non-resolvable uncertainties, cannot be causally modelled or simulated in a meaningful way and requires a judgmental approach. It identifies and investigate the total set of possible relationships or “configurations” contained in a given problem complex. This is accomplished by going through a number of iterative phases which represent cycles of analysis and synthesis – the basic method for developing (scientific) models”.³⁹

“The method begins by identifying and defining the most important dimensions (or parameters) of the problem complex to be investigated, and assigning each dimension a range of relevant values or conditions. This is done mainly in natural language, although abstract labels and scales can be utilized to specify the set of elements defining the discrete value range of a parameter”.⁴⁰

“A morphological field is constructed by setting the parameters against each other in order to create an n-dimensional configuration space. A particular configuration within this space (the black cells in the matrix in Figure. 2) contains one “value” from each of the parameters, and thus marks out a particular state of, or possible formal solution to, the problem complex”.⁴¹

“The point is, to examine all of the configurations in the field in order to establish which of them are possible, viable, practical, etc., and which are not. In doing this, we mark out in the field a relevant *solution space*. The solution space of a morphological field consists of the subset of all the configurations which satisfy some criteria. The primary criterion is that of internal consistency”.

³⁸ Ritchey (2011), p. 12.

³⁹ Ritchey (2003), p 2f.

⁴⁰ Ritchey (2012), p.3.

⁴¹ Ibid.

Parameter A	Parameter B	Parameter C	Parameter D	Parameter E	Parameter F
Condition A1	Condition B1	Condition C1	Condition D1	Condition E1	Condition F1
Condition A2	Condition B2	Condition C2	Condition D2	Condition E2	Condition F2
Condition A3	Condition B3	Condition C3		Condition E3	Condition F3
Condition A4	Condition B4	Condition C4		Condition E4	Condition F4
Condition A5		Condition C5		Condition E5	
				Condition E6	

Figure 2: A 6-parameter morphological field. The darkened cells define one of 4,800 possible (formal) configurations.

		Parameter A					Parameter B				Parameter C					Parameter D		Parameter E						Parameter F					
		Condition A1	Condition A2	Condition A3	Condition A4	Condition A5	Condition B1	Condition B2	Condition B3	Condition B4	Condition C1	Condition C2	Condition C3	Condition C4	Condition C5	Condition D1	Condition D2	Condition E1	Condition E2	Condition E3	Condition E4	Condition E5	Condition E6	Condition F1	Condition F2	Condition F3	Condition F4		
Parameter B	Condition B1																												
	Condition B2																												
	Condition B3																												
	Condition B4																												
Parameter C	Condition C1																												
	Condition C2																												
	Condition C3																												
	Condition C4																												
	Condition C5																												
Parameter D	Condition D1																												
	Condition D2																												
Parameter E	Condition E1																												
	Condition E2																												
	Condition E3																												
	Condition E4																												
	Condition E5																												
	Condition E6																												
Parameter F	Condition F1																												
	Condition F2																												
	Condition F3																												
	Condition F4																												

Figure 3: The Cross-Consistency matrix for the morphological field in Figure 2. The dark cells represent the 15 pair-wise relationships in the particular configuration marked out in Figure 2.

“However, typical morphological fields of six to ten variables can contain between 50,000 and 5,000,000 formal configurations, far too many to inspect by hand. Thus, the next step in the analysis-synthesis process is to examine the internal relationships between the parameters and reduce the field by identifying, and weeding out, all *mutually contradictory conditions*. This is achieved by a process of Cross-Consistency Assessment (CCA). All of the parameter values in the morphological field are compared with one another, pair-wise, in the manner of a cross-impact matrix.”⁴² (Figure 3)

“As each pair of conditions is examined, a judgment is made as to whether – or to what extent – the pair can coexist, i.e. represent a consistent relationship. Note that there is no reference here to direction or causality, but only to mutual consistency. Using this technique, a typical morphological field can be reduced by up to 90 or even 99%, depending on the problem structure”.⁴³

“There are three basic types of constraints involved in a CCA, although there can be any number of specific, user-define constraints. These basic constraints follow the classical distinction between formal, empirical and normative statements: a. Formal assessments (logical or analytic contradictions); b. Empirical assessments (empirical incompatibilities); c. Normative assessments (prescriptive/proscriptive constraints)”.⁴⁴

“When this solution space is synthesized through CCA, the resultant morphological field becomes an *interactive inference model*, in which any parameter (or multiple parameters) can be selected as “input”, and any others as “output”. Thus, with proper computer support, the field becomes a conceptual laboratory for exploring knowledge bases and solution requirements, testing assumptions and interventions, and spotting potential unintended consequences – which are one of the main outcomes of intervening into wicked problems”.⁴⁵

“GMA employs facilitated group interaction as a central feature of the modelling process, since it is not only structuring a complex problem, but creating among the participants shared concepts and a common modelling framework. What is essentially a process of collective creativity is best facilitated in dialogue between participants, rather than each participant addressing an “assembly”. For this reason, it is best to work with subject specialist groups of no more than six to seven persons. If a wider knowledge base is required, one can either bring specialized competence into specific group sessions, or work in parallel groups”.⁴⁶

4. Developing a Decision Support Model for Peace Operations

Because the Decision Support Model that we propose for POs (DSMPO) was part of doctoral project, the work could not be carried out in a facilitated group setting. However, the “power of facilitated group work with subject matter specialists” is compensated for by almost two years of research on the subject. Also, this specific DSMPO does not claim to be the ultimate or the most

⁴² Ibid.

⁴³ Ritchey (2015), p.13.

⁴⁴ Ibid, p.8.

⁴⁵ Ritchey (2011), p.14.

⁴⁶ Ibid.

accurate solution to the problem complex. Rather, it is a prototype which can provide a basis for further scientific discussion and stimulate critical thinking by applying logical, empirical, and normative judgments for decision makers and planners. Its objective is to formulate conditions and to support decision-makers and planners in gaining a common conceptual framework for better understanding of the problem complex.

4.1 Analysis Phase: Identifying Parameters

The central task at this point is to identify and define the most important factors (parameters) influencing a national decision to contribute to peace operations. These factors are composed of several core questions: why, where, and how should/must a nation contribute to peace operations outside of its borders? Also, what positive and negative factors can have an impact on decisions to participate? We have settled on the following nine parameters (Figure 4), which contain both rank-ordered and non-ordinal domains. These are:

1. National/Military Security goals
2. Mechanisms
3. Legitimacy
4. Financial aspects
5. Accepted level of casualties
6. Negative Impacts
7. Type of PO
8. Tasks
9. Required Capabilities

National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks	Required Capabilities
Protection of direct/vested interests	UN	- UN Mandate - Consent of Host Country	Nation is reimbursed	No or few casualties accepted	No Impact	Conflict Prevention	Surveillance/Early warning	Military Specialized Unit (Military Police)
Contribution to regional security	Regional organizations	- UN Mandate - NO consent of Host Country	Sharing financial burden with other parties	Some/limited casualties accepted	IT attacks	Peace Enforcement	Preventive Deployment	LAND
Contribution to global security	Ad hoc Coalition	- NO UN Mandate - Consent of Host Country	Nation finances itself	Relatively high casualties accepted	Social unrest	Peacekeeping	Enforcement of sanctions and Embargo activities	AIR
Contribution to Defense Reforms (Comprehensive / Institutional)	Individual	- NO UN mandate - NO consent of Host Country			Economic recession	Post Conflict Peace Building	Forcible Separation of Belligerent parties	NAVY
Contribution to Defense Reforms (Limited / practical field experience)					Political/Diplomatic isolation		The establishment and supervision of protected and safe areas	SOF
Forming positive int. image. Respect in World arena					Target of external attacks 1. conventional 2. asymmetric		Establishing and enforcing No-Fly zones	Health Service Capabilities
							Freedom and denial of movement	ISR
							Support to Protection of Civilians	Non-military contribution
							Force Protection and Safety	
							Interposition	
							Observation and Monitoring	
							Transition assistance	
							Humanitarian Aid	
							Maritime Security Operations	

Figure 4: The nine-parameter DSMPO morphological field

P#1: National/Military Security Goals. This parameter represents the question of *why* a nation would choose to contribute to peace operations outside of its own borders. These reasons are not mutually exclusive, but are rank-ordered in accordance with the importance we have attributed to them. As discussed earlier, contributions to peace operations represent instruments for achieving certain national/military security goals. Thus, a nation may choose to participate in a peace operation due to one or more these goals.

P#2: Mechanisms: This parameter defines the different mechanisms through which a nation can contribute to peace operations. These are mutually exclusive. They are ordinal in *scope*, but not necessarily rank-ordered in terms of *importance*. Instead, they are a reflection of *available mechanisms*. A PO may be conducted under the sponsorship of the United Nations (UN), another intergovernmental organization (IGO), within a coalition of agreeing nations, or unilaterally. The UN Charter provides several means for the international community to address threats to peace and security. Under Chapter VIII, “Regional Arrangements”, regional organizations such as North Atlantic Treaty Organization (NATO), the Organization of American States (OAS), the African Union (AU), the Economic Community of West African States (ECOWAS), and the European Union (EU) may also act to prevent, halt, or contain conflict in their respective regions.⁴⁷

P#3-6: The next four parameters (“Legitimacy”, “Financial aspects”, “Accepted level of causalities” and “Negative impact of contribution to peace operations”) all have impacts on *shaping* the decision to participate, either encouraging or discouraging. The first three are mutually exclusive and rank-ordered. The last one is a non-mutually exclusive variable, representing possibly concurrent conditions.

P#7-9: The final three parameters (“Type of PO”, “Tasks” and “Required Capabilities”) are “doctrinal” and non-ordinal. All of these doctrinal terms or practices are referenced from UN, NATO and other related documents as elaborated earlier in the paper. Due to their unique characteristics, individual Peace Operations require classification that reflects their essential nature. UN Capstone Doctrine clearly defines the types of Peace Operations as 1) “conflict prevention”, 2) “peacemaking”, 3) “peace enforcement”, 4) “peacekeeping”, and 5) “post conflict peace-building”.⁴⁸ However, we have not included “peacemaking” in the “Type of PO”, as it does not have force capability implications. Peacemaking generally includes measures to address conflicts in progress and usually involves diplomatic actions to bring hostile parties to a negotiated agreement.⁴⁹

The parameter “Tasks” consolidates a number of possible missions and tasks that are relevant to peace operations. They are taken mainly from Allied Joint Doctrine for Military Contribution to Peace Support⁵⁰ and NORDCAPS PSO Manual.⁵¹ Some missions and tasks are related to *specific operations* whereas others relate to different *types* of peace operations. The tasks presented here

⁴⁷ JP 3-07.3 Peace Operations, p.vii.

⁴⁸ The United Nations (2008), p. 19.

⁴⁹ Ibid, p.17.

⁵⁰ AJP-3.4.1. (2014).

⁵¹ Nordcaps PSO Manual (2002).

are not prescriptive, exhaustive or rank ordered, and do not cover all forms of military activities during peace operations.⁵²

In the case of “Transition assistance”, a number of similar military activities/tasks (in terms of their objectives) have been generalized. This task is a composition of DDR, Locate and confiscate weapons, munitions and supplies, EOD and mine clearance, law and order, support of the electoral process, refugee and IDP management, early stage security sector reform (SSR), the supervision of ceasefire and demarcation lines, and border security/control, all of which are activities to assist a nation – in conflict – in facilitating a transition to legitimate governance.

Over the years, peace operations have evolved from being primarily *military* in focus, to incorporate a more complex configuration of elements – i.e. military, police, and civilian – for sustainable peace.⁵³ However, in our model, when it comes to “Required capabilities” (the final parameter), the focus is *military*. The values in this parameter are, of course, not mutually exclusive: all military components (more or less) can be utilized separately or jointly in peace operations. Here we refer to Allied Joint Publication 3.4.1⁵⁴ to identify required capabilities, expressed mainly at the component level (Air, Land, Maritime, etc).

This concludes the first phase in the development of the DSMPO. We have defined a morphological field – a discrete *modelling space* – consisting of nine parameters, each being assigned a domain of three to fourteen values. The total number of possible configurations (i.e. combinations of values) in a morphological field is the product of the number of values under each parameter – in this case, $6 \times 4 \times 4 \times 3 \times 3 \times 6 \times 4 \times 14 \times 8 = 2,322,432$. It is practically impossible to examine all of these configurations separately, in order to establish which of them are possible, viable, feasible, etc. We need to reduce this large *problem space* to a practical *solution space* which only contains the subset of possible and viable solutions.

4.2 Identifying mutual constraints & developing a solution space

The next step in the development of the model – the *synthesis* phase – is to examine the *internal relationships* between the parameters and reduce the field by identifying and weeding out all mutually contradictory parameter values. This is carried out by the procedure called Cross-Consistency Assessment (CCA). To start the process, we must first identify those parameters that are not directly linked to one another, i.e. do not have a direct impact one on another. As shown in the Figure 5, all of the blank (empty) *parameter blocks* (the alternative white and gray areas) represent pairs of parameters that do not directly influence each other. (The blue rectangle marks out one of them.) We therefore do not need to perform a Cross-Consistency Assessment on these parameter pairs. On the remaining parameter blocks, we have performed more than 600 assessments (logical, empirical or normative) to complete the synthesis process and the reduction of the problem space. It is not practicable to go through the details of each assessment here. However, it is useful to provide some examples to better understand how the CCA works, specifically in this model.

⁵² AJP-3.4.1. (2014), p. 4-2.

⁵³ The United Nations (2008), p.18.

⁵⁴ AJP-3.4.1. (2014), pp. 4.10-20.

		National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks
Mechanisms	UN	K	K	X	-	-	-	-	-
	Regional organizations	-	-	-	-	-	-	-	-
	Ad hoc Coalition	-	K	X	-	K	-	-	-
	Individual	-	-	K	X	X	K	-	-
Legitimacy	UN Mandate/Consent of Host country	-	-	-	-	-	-	-	-
	UN Mandate/NO consent of Host country	-	-	-	K	K	K	X	-
	NO UN Mandate/Yes Consent of Host country	-	-	K	K	K	X	-	-
	NO UN mandate/NO consent of Host country	X	X	X	X	X	X	K	-
Financial aspects	Nation are getting reimbursed	K	K	K	K	-	-	X	X
	Sharing financial burden with other parties	K	-	K	-	-	K	K	K
	Nation spends money	-	K	K	-	-	X	-	-
Accepted level of casualties	No/few casualties accepted	-	-	-	-	-	-	-	-
	Some/limited casualties accepted	-	K	X	-	K	-	-	-
	Relatively High casualties accepted	-	X	X	X	X	X	-	-
Negative Impacts on Sending nation	No impact	K	K	K	-	-	K	K	K
	Informational attacks	-	-	K	K	X	-	-	-
	Social unrest	-	-	X	X	X	X	X	X
	Economic recession	-	-	X	X	X	X	X	X
	Political/Diplomatic isolation	-	-	X	X	X	X	X	X
	Target of external attacks	-	-	X	X	X	X	X	X
Type of PO	Conflict Prevention	-	-	-	-	-	X	K	X
	Peace Enforcement	-	-	X	X	X	X	X	X
	Peacekeeping	-	-	-	-	-	X	X	X
	Post Conflict Peace Building	-	-	-	-	-	X	X	X
Tasks	Surveillance/Early warning	-	X	X	X	X	X	X	X
	Preventive Deployment	-	X	X	K	K	K	X	X
	Enforcement of sanctions and Embargoes	-	K	K	X	-	-	-	-
	Separation of Belligerent parties	-	-	X	-	-	-	X	X
	The establishment and supervision of No-Fly zones	-	K	X	K	-	-	X	X
	Establishing and enforcing No-Fly zones	-	X	X	-	-	-	X	X
	freedom and denial of movement	-	K	X	-	-	-	X	X
	Support to the Protection of Civilians	-	X	X	K	K	X	X	X
	Force Protection and Safety	-	K	X	K	K	X	X	X
	Interposition	-	K	X	K	K	X	X	X
	Observation and Monitoring	-	X	X	X	X	X	X	X
	Transition assistance	-	X	X	X	X	X	X	X
Humanitarian Aid	-	X	X	X	X	X	X	X	
Maritime Security Operations	-	K	X	X	X	X	X	X	
Required Capabilities	Military Specialized Unit (Military Police)	-	X	X	-	-	-	K	X
	LAND	-	-	-	-	-	-	X	X
	AIR	-	K	X	-	-	-	K	X
	NAVY	-	X	X	-	-	-	K	X
	ISCF	-	K	X	-	-	-	K	X
	Health Service Capabilities	-	X	X	-	-	-	X	X
	ISR	-	X	X	-	-	-	X	X
	Non-military contribution	-	X	X	-	-	-	X	X

Figure 5: Cross-Consistency Matrix for the nine-parameter DSMPO model. The blue rectangle marks out one of the “blank” parameter blocks.

The following “assessment keys” were applied (for this specific model):

- “-” (hyphen) indicates that the two intersecting values are deemed fully consistent
- “X” indicates that the two intersecting values are deemed inconsistent.
- “K” indicates that the developer of the model is not sure if the two values are consistent or not.

As an example, let us choose two parameters (“Mechanism” and “Legitimacy”) that have a direct impact on each other. A UN Mandate is the legitimate basis for the UN to be involved in peace operations. Additionally, UN peacekeeping principles always seek the consent of the host nation to initiate the Mission. Generally, the UN would not be involved in any peace operation without both of these conditions being met. Figure 6 depicts internal contradictions where these conditions are not met (the red cells where the “X” key was applied). Another example is the assessment of “Negative impact on sending nation” and “Type of peace operations”. As shown in Figure 7 (red cell), we do not believe that a nation, which chose to participate in a *peace enforcement* operation, would not experience any internal negative impact, especially if the operation is conducted in the absence of consent of the country where the peace operators are deployed.

Mechanisms	National/Military Security goals	Mechanisms			
		UN	Regional organizations	Ad hoc Coalition	Individual
	Protection of directvested interest	K	K	-	-
	Contribution to regional security	-	-	-	-
	Contribution to global security	-	-	-	-
	Contribution to Defense Reforms	-	-	-	-
	Forming positive int. image. Respect in World arena	-	-	-	-
	UN	-	-	-	-
	Regional organizations	-	-	-	-
	Ad hoc Coalition	-	K	-	K
	Individual	-	-	K	K
Legitimacy	UN Mandate/Consent of Host country	-	-	-	-
	UN Mandate/NO consent of Host country	-	-	X	K
	NO UN Mandate/Yes Consent of Host country	-	-	K	K
	NO UN mandate/NO consent of Host country	-	X	X	X

Figure 6

Type of PO	National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	
							UN
	Protection of directvested interest	-	-	-	-	-	
	Contribution to regional security	-	-	-	-	-	
	Contribution to global security	-	-	-	-	-	
	Contribution to Defense Reforms	-	-	-	-	-	
	Forming positive int. image. Respect in World arena	-	-	-	-	-	
	UN	X	X	X	X	X	
	Regional organizations	X	X	X	X	X	
	Ad hoc Coalition	X	X	X	X	X	
	Individual	X	X	X	X	X	
	JN Mandate/Consent of Host country	X	X	X	X	X	
	Mandate/NO consent of Host country	X	X	X	X	X	
	Mandate/Yes consent of Host country	X	X	X	X	X	
	NO UN mandate/NO consent of Host country	X	X	X	X	X	
	Nation are getting reimbursed	-	-	-	-	-	
	Nation are getting financial burden with other parties	-	-	-	-	-	
	Nation spends money	-	-	-	-	-	
	No/few casualties accepted	-	-	-	-	-	
	Some/limited casualties accepted	-	-	-	-	-	
	Relatively High casualties accepted	-	-	-	-	-	
	No impact	-	-	-	-	-	
	Informational attacks	-	-	-	-	-	
	Social unrest	-	-	-	-	-	
	Economic recession	-	-	-	-	-	
	Political/Diplomatic isolation	-	-	-	-	-	
	Target of external attacks 1.conventional 2.asymmetric	-	-	-	-	-	
Type of PO	Conflict Prevention	-	-	-	-	-	
	Peace Enforcement	-	-	-	-	-	
	Peacekeeping	-	-	-	-	-	
	Post Conflict Peace Building	-	-	-	-	-	

Figure 7

The model has now met its second criterion by establishing the logical and empirical relationships between the parameter values. By completing the CCA for the DSMPO, we have developed an inference model where the number of configurations in the total *problem space* (2,322,432) has been reduced to a *solution space* of 9,506, representing viable alternative solutions. This is a reduction of more than 99%. Although the number of configurations in the solution space is still considerable, by selecting different variables as “inputs” or “drivers”, we can formulate different “scenarios” and examine their possible conditions and implications.

4.3 Formulating Scenarios as Test Cases

Scenario 1: Assume that the political leadership of “Nation A” decides to participate in peace operations in order both to contribute to global security and to project a positive international image. At the same time, however, planners are directed to consider peace operations involving “*minimum casualties*” and “*no a heavy financial burden*”.

National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks	Required Capabilities
Protection of directvested interests	UN	UN Mandate - Consent of Host Country	Nation is reimbursed	No or few casualties accepted	No impact	Conflict Prevention	Surveillance/Early warning	Military Specialized Unit (Military Police)
Contribution to regional security	Regional organizations	- UN Mandate - NO consent of Host Country	Sharing financial burden with other parties	Some/limited casualties accepted	IT attacks	Peace Enforcement	Preventive Deployment	LAND
Contribution to global security	Ad hoc Coalition	- NO UN Mandate - Consent of Host Country	Nation finances itself	Relatively high casualties accepted	Social unrest	Peacekeeping	Enforcement of sanctions and Embargo activities	AIR
Contribution to Defense Reforms (Comprehensive / Institutional)	Individual	- NO UN mandate - NO consent of Host Country			Economic recession	Post Conflict Peace Building	Forcible Separation of Belligerent parties	NAVY
Contribution to Defense Reforms (Limited / practical field experience)					Political/Diplomatic isolation		The establishment and supervision of protected and safe areas	SOF
Forming positive int. image. Respect in World arena					Target of external attacks 1.conventional 2.asymmetric		Establishing and enforcing No-Fly zones	Health Service Capabilities
							Freedom and denial of movement	ISR
							Support to Protection of Civilians	Non-military contribution
							Force Protection and Safety	
							Interposition	
							Observation and Monitoring	
							Transition assistance	
							Humanitarian Aid	
							Maritime Security Operations	

Figure 8: Example solution space for Scenario 1. Input conditions: “Nation is reimbursed” and “No or few casualties accepted”

Based on the initial conditions “Nation is reimbursed” and “No or few casualties accepted” as input requirements (red cells, Figure 8), we obtain the solution space (blue cells) which is deemed consistent with these requirements. It indicates that POs should be chosen which function within a UN framework and a UN mandate meeting most of the legitimacy requirements. It also indicates potentially achievable national/military security objectives, types of POs, mission and tasks, as well as required capabilities.

Scenario 2: Military planners of “Nation A” make a proposal (to the nation’s political leadership) to contribute Naval resources to an ongoing maritime security operation conducted by a Regional organization.

National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks	Required Capabilities
Protection of directvested interests	UN	- UN Mandate - Consent of Host Country	Nation is reimbursed	No or few casualties accepted	No Impact	Conflict Prevention	Surveillance/Early warning	Military Specialized Unit (Military Police)
Contribution to regional security	Regional organizations	- UN Mandate - NO consent of Host Country	Sharing financial burden with other parties	Some/limited casualties accepted	IT attacks	Peace Enforcement	Preventive Deployment	LAND
Contribution to global security	Ad hoc Coalition	- NO UN Mandate - Consent of Host Country	Nation finances itself	Relatively high casualties accepted	Social unrest	Peacekeeping	Enforcement of sanctions and Embargo activities	AIR
Contribution to Defense Reforms (Comprehensive / Institutional)	Individual	- NO UN mandate - NO consent of Host Country			Economic recession	Post Conflict Peace Building	Forcible Separation of Belligerent parties	NAVY
Contribution to Defense Reforms (Limited / practical field experience)					Political/Diplomatic isolation		The establishment and supervision of protected and safe areas	SOF
Forming positive int. image. Respect in World arena					Target of external attacks 1.conventional 2.assymetric		Establishing and enforcing No-Fly zones	Health Service Capabilities
							Freedom and denial of movement	ISR
							Support to Protection of Civilians	Non-military contribution
							Force Protection and Safety	
							Interposition	
							Observation and Monitoring	
							"Transition assistance"	
							Humanitarian Aid	
							Maritime Security Operations	

Figure 9: Example solution space for Scenario 2. Input conditions: “Navy”, “Maritime security operations”, and “Regional organizations”.

Here the initial (input) conditions selected are “Navy”, “Maritime security operations”, and “Regional organizations”, with the resultant solution space shown in Figure 9. In this case, the participating country could potentially achieve the designated objectives and all other conditions. However, as concerns *financial aspects*, the country would not be fully reimbursed for its participation. As a follow-up, the leadership may task the planners to look further to other options, possibly with other partners, which might also minimize the financial cost impact.

Scenario 3: “Nation A” is looking for military partnership with international organizations through participating in peace operations. The main national/military security goal is to contribute to defence reforms. Thus, planners are tasked to investigate options that facilitate defence reforms.

National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks	Required Capabilities
Protection of direct/vested interests	UN	- UN Mandate - Consent of Host Country	Nation is reimbursed	No or few casualties accepted	No Impact	Conflict Prevention	Surveillance/Early warning	Military Specialized Unit (Military Police)
Contribution to regional security	Regional organizations	- UN Mandate - NO consent of Host Country	Sharing financial burden with other parties	Some/limited casualties accepted	IT attacks	Peace Enforcement	Preventive Deployment	LAND
Contribution to global security	Ad hoc Coalition	- NO UN Mandate - Consent of Host Country	Nation finances itself	Relatively high casualties accepted	Social unrest	Peacekeeping	Enforcement of sanctions and Embargo activities	AIR
Contribution to Defence Reforms (Comprehensive / Institutional)	Individual	- NO UN mandate - NO consent of Host Country			Economic recession	Post Conflict Peace Building	Forcible Separation of Belligerent parties	NAVY
Contribution to Defence Reforms (Limited / practical field experience)					Political/Diplomatic isolation		The establishment and supervision of protected and safe areas	SOF
Forming positive int. image. Respect in World arena					Target of external attacks 1. conventional 2. asymmetric		Establishing and enforcing No-Fly zones	Health Service Capabilities
							Freedom and denial of movement	ISR
							Support to Protection of Civilians	Non-military contribution
							Force Protection and Safety	
							Interposition	
							Observation and Monitoring	
							Transition assistance	
							Humanitarian Aid	
							Maritime Security Operations	

Figure 10: Example solution space for Scenario 3. Input conditions: “Contribution to Defence Reforms (Comprehensive/Institutional)” and “Contribution to Defence Reforms (Limited/practical field experience)”.

Two of the six “National/military security goals” concern defence reforms. The first one facilitates *comprehensive and institutional* defence reforms; the second facilitates *limited/practical field experience*. We can choose both of these as inputs (Figure 10), but at the same time differentiate them in order to see the “gap” between them. In this case, the dark blue cells represent what is *common* to both of the selected input values concerning “Contribution to Defence Reforms” (i.e. their *union*). The light blue cells belong only to the second value, i.e. with “Limited/practical field experience”

Thus, the gap-analysis shows that “Comprehensive/institutional defence reform” is possible only in the framework of regional organizations, as was discussed earlier under “National security Goals”. (It is important to point out that not all existing regional organizations would necessarily facilitate such comprehensive reforms.) However, “Limited/practical field experience” can be gained in UN and Ad Hoc Coalitions.

Scenario 4: This scenario employs the model as a risk assessment tool. We ask: Why would a nation take the risk of “relatively high casualties” in order to be involved in a peace operation?

In this case, the participating nation would only take part in the peace operation if direct/vested interests were at stake. It would do this even in the absence of a legal internationally acceptable mandate, and at the risk of a whole spectrum of possible negative impacts. This would be a “peace enforcement” operation with the designated task presented in the model (Figure 11).

National/Military Security goals	Mechanisms	Legitimacy	Financial aspects	Accepted level of casualties	Negative Impacts on Sending nation	Type of PO	Tasks	Required Capabilities
Protection of direct/vested interests	UN	UN Mandate - Consent of Host Country	Nation is reimbursed	No or few casualties accepted	No Impact	Conflict Prevention	Surveillance/Early warning	Military Specialized Unit (Military Police)
Contribution to regional security	Regional organizations	UN Mandate - NO consent of Host Country	Sharing financial burden with other parties	Some/limited casualties accepted	IT attacks	Peace Enforcement	Preventive Deployment	LAND
Contribution to global security	Ad hoc Coalition	NO UN Mandate - Consent of Host Country	Nation finances itself	Relatively high casualties accepted	Social unrest	Peacekeeping	Enforcement of sanctions and Embargo activities	AIR
Contribution to Defense Reforms (Comprehensive / Institutional)	Individual	NO UN mandate - NO consent of Host Country			Economic recession	Post Conflict Peace Building	Forcible Separation of Belligerent parties	NAVY
Contribution to Defense Reforms (Limited / practical field experience)					Political/Diplomatic isolation		The establishment and supervision of protected and safe areas	SOF
Forming positive int. image. Respect in World arena					Target of external attacks 1. conventional 2. asymmetric		Establishing and enforcing No-Fly zones	Health Service Capabilities
							Freedom and denial of movement	ISR
							Support to Protection of Civilians	Non-military contribution
							Force Protection and Safety	
							Interposition	
							Observation and Monitoring	
							Transition assistance	
							Humanitarian Aid	
							Maritime Security Operations	

Figure 11: Example solution space for Scenario 4. Input value: “Relatively high casualties accepted”.

5. Conclusions

In the introductory section of our discussion, we provided an overview of peace operations and presented some of the key factors that can/would influence the decision process to participate in such operations. Historically, we see that peace operations have not merely changed in scope, but have also changed in character, shifting from traditional Cold War type missions to more complex, contemporary multi-dimensional operations. Taking into account global geopolitical changes since the end of the Cold War, as well as changes that are related to the character and scope of peace operations, we have put forward a number of factors that should be taken into account in the decision-making process for participation in a PO. These include the issues of international legitimacy; types of peace operations, their associated tasks and required capabilities; national security goals and existing mechanisms to achieve such goals; and financial resources, casualty risks and possible negative consequences associated with participation in peace operations.

Note that this DSMPO, and the scenarios that can be generated with it, is not meant to be a *substitute* for human judgement, but an *aid* to such judgement. And although the present version of the model is a prototype and hardly exhaustive, it captures major factors surrounding the problem complex and can provide a measure of guidance to make the decision-making process more structured, focused and transparent. Also, it establishes a general framework which can be adapted and tailored to the specific needs of a given nation. Indeed, this adaptation can be affected by a group of national experts doing their own version of the Cross-Consistency Assessment (CCA) from the point of view of their own specific national conditions and requirements. In this way, it is possible for the model to be refined and developed over time.

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