

# Systemic Operational Design – a study in failed concept

Łukasz Przybyło

[l.przybylo@akademia.mil.pl](mailto:l.przybylo@akademia.mil.pl)

 <https://orcid.org/0000-0002-9425-5359>

Military Strategy Institute, War Studies University, Al. Gen. Chruściela “Montera” 103, 00-910 Warsaw, Poland

---

## Abstract

*One of the many reasons for the failure of the Israel Defence Forces' (IDF) in the Second Lebanon War was the concept of Systemic Operational Design (SOD), translated into de facto military doctrine. The story of the rise and fall of the SOD idea is a warning sign for all militaries faced with “modern” and “fashionable” ideas. The purpose of this paper is therefore to describe and evaluate the Systemic Operational Design created and introduced into the IDF by Brigadier General Shimon Naveh and the Operational Theory Research Institute (OTRI). The study is based on the literature created by the State of Israel, the IDF, and its main proponent Shimon Naveh, as well as other militaries (mainly the US Army). This theoretical background is confronted with the IDF's operations during the Second Lebanon War of 2006 and their effects on the war's outcome. The over intellectualised, ambiguous, and not properly structured concept of the SOD, introduced as the IDF's doctrine and approach to operations, led to military failure (which also had more root causes) in Lebanon. A study of the SOD failure should lead to a careful approach being taken to all new military concepts and ideas. Both change and continuation need to be properly balanced and evaluated, while enhanced military effectiveness could be of great value. At the same time, the impact of concepts which are not well anchored in military science/history and untested, like the SOD, could be devastating for militaries.*

---

## Keywords:

military doctrine, IDF, systemic operational design, operational art, 2006 Lebanon War

## Article info

Received: 22 June 2022

Revised: 13 April 2023

Accepted: 14 April 2023

Available online: 11 May 2023

Citation: Przybyło, Ł. (2023) 'Systemic Operational Design – a study in failed concept', Security and Defence Quarterly, 42(2), pp. 35–54. doi: [10.35467/sdq/163292](https://doi.org/10.35467/sdq/163292).



© 2023 Ł. Przybyło published by War Studies University, Poland.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

## Introduction

Systemic Operational Design (SOD) was an invention of the Israeli Defence Forces' (IDF) Operational Theory Research Institute (OTRI) and translated into de facto military doctrine in 2006. It was a wholly new concept reflecting the changed security environment of Israel. Israeli officers were taught SOD on several Advanced Operational Command and Staff Courses (AOCSC). The leading personality behind OTRI was Brigadier General Shimon Naveh. More than a decade (1994–2006) of working on and implementing SOD resulted in failure during the Second Lebanon War in 2006. This article contains a description of the process and the reasons for the fiasco.

The author was prompted to write the article after researching the 2006 Lebanon War and discovering that there are quite astonishing differences in how the OTRI, SOD, Shimon Naveh, etc. are portrayed in the literature published in English (e.g. [Adamsky, 2010](#); [Wass De Czege, 2009](#)) and the official documents of the Israeli government ([Report of the State Comptroller, 2006](#)). A rare exemption is an article by Milan Vego that is very critical of both the SOD and Naveh himself ([Vego, 2009](#)). This dissonance is also evident in the public writings of members of Israel's military society. Some authors are either under the spell of new ideas (e.g. [Glick, 2006](#); [Hazani, 2011](#)) or totally oppose them ([Wegman, 2007](#)).

## Methodology

There is a plethora of English and Hebrew publications concerning almost all aspects of the 2006 Lebanon War (e.g. [Kober, 2008](#); [Marcus, 2018](#); [Farquhar, 2009](#); Winograd report, 2008). There is still a need for an approach that focuses on doctrinal issues connecting SOD, Israeli Operational Art, and the IDF's performance during the 2006 Lebanon War. That is why it is crucial to understand the intellectual foundations of Israeli doctrinal thinking and the works of [Avi Kober \(2016\)](#), [Kobi Michael \(2007\)](#), and [Tamir Libel \(2010, 2016\)](#) are very helpful in this regard.

A research paper published by SAMS students who actually trained with a concept ([Sorrells \*et al.\*, 2005](#)) is extremely helpful when trying to understand SOD and how it should be used. SAMS stands for School of Advanced Military Studies in the Command & General Staff College, which is considered a school for the bright, creative US Army officers who are capable of critical thinking and who are trained to become valued staff members of operational-level HQs. The test on SOD performed by SAMS students has enormous value for anyone researching that subject.

This article seeks answers to the following questions:

1. Why did the IDF need a new doctrine and what was the intellectual foundation for creating one?
2. What was Systemic Operational Design?
3. How did the OTRI's teaching and ideas affect the IDF's operations during the 2006 Lebanon War?
4. What lessons can be learned from the failed military concept that SOD clearly was?

To answer those questions, it will be useful for all those seeking a bridge to connect "old" classical thinking about military art with the "new" technology-driven world of military

wonders to consult both English and Hebrew literature, the SAMS student training, and several interviews with top Israeli commanders carried out during several visits to Israel between 2015 and 2019. Hopefully, doing so will help to avoid the traps that the IDF and OTRI clearly fell into.

There are two important stipulations for this article. Firstly, the author believes that it is necessary for a reader with a deeper understanding of the Israeli Defence Forces' doctrinal and educational history to be presented with a lengthy introduction because without one, knowledge some of those important but intangible reasons for the failure of SOD would not be noticed. Secondly, there is no discussion about Systemic Design vs. Design in this paper as such a comparison would necessitate a separate paper and the author plans to carry out further research in that area.

## The IDF's doctrinal and educational history (1948–1994)<sup>1</sup>

The IDF was founded without a cohesive military doctrine, and the most advanced training offered to officers was platoon and company courses. Many officers came from the British, Soviet, Polish, and American militaries and their professional backgrounds proved very important for the newly-born Israeli army. The IDF concentrated on controlling the massive surge of immigrants after the War of Independence (1948–1949) was over, which hindered organisational and educational development (Drory, 2005). A complete framework for military education didn't come into being until Yitzhak Rabin's time in charge of the Training Department from 1954 to 1956. The intellectual life of the IDF was quite active in the 1950s and the early 1960s, with a focus on military theory and history, e.g. in *Ma'arachot*, the primary military periodical of the IDF, military history accounted for 43.5% of all articles (Kober, 2016, p. 59). There were several officers who went to overseas general staff schools.

Israeli strategy's underlying principles were evident. Israel must win quickly because it lacked the resources to engage in a protracted confrontation. The IDF had to fight offensively, trying to pre-empt the adversary, due to the lack of territorial depth. Due to the Middle East's open terrain and the geographical features of the theatre of operations, air superiority was crucial for securing victory – this idea was at that time widely accepted and still is. Israel's numerical disadvantage was assured by the regional population imbalance, hence the IDF strived for quality manpower.

Following the Sinai Campaign in 1956, the IDF drastically shifted its perspective on modern warfare, shifting from infantry-based operations to air supremacy, armoured operations, and joint operations between air force and tank units. Tanks and supersonic fighter-bombers were considered the primary combat tools. This inclination became stronger as a result of the IDF's outstanding performance during the Six-Day War. Israelis paid little attention to conducting a war at the operational level. The officer corps had an anti-intellectual mindset (Van Creveld, 2008, p. 168). General Tal once claimed that Israeli officers were promoted through a process of natural selection based on their performance on the battlefield. The training for battalion commanders was the highest level of required coursework for officers.

<sup>1</sup>This section is partly based on my article: Przybyło E. (2019). *Building Military Doctrine based on History and Experience: 20th century examples from Germany, France, Israel and the US*. In Piirimäe K. (Ed.). *Estonian Yearbook of Military History*, 2019, 9 (15). doi: [10.22601/SAA.2019.08.04](https://doi.org/10.22601/SAA.2019.08.04).

The Command and Staff Academy, which was meant to train officers from first lieutenant to lieutenant colonel, wasn't given much respect (Van Creveld, 2008, p. 168). Additionally, right before the Six-Day War, Prime Minister and Minister of Defence, Levi Eshkol, decided that it was superfluous to maintain the General Staff Academy, which was intended for colonels, generals, and civilians dealing with military and security issues (Almog, 2016). Despite having only completed the battalion commanders' course, General David "Dado" Elazar was promoted and eventually assumed the role of head of the General Staff (Van Creveld, 2008, p. 169). The IDF's intellectual horizon was constrained by this mentality. The study of war theory and military history nearly came to an end to the point where Martin Van Creveld, after addressing general staff members (in the 1980s), stated: "I have never met such a bunch of ignorant people in my entire life. In no other state or organisation have I seen people who knew so little about their profession and its theory, including the history and doctrine of their own army" (Kober, 2016, p. 44). The higher echelons of the IDF were unimaginative, unwilling to change their worldview, repeatedly rehearsing the Six-Day War in their "sterile" field drills, unable to comprehend war as an instrument of policy or distinguish between tactical, operational, and strategic levels of war (Ezov, 2016, loc. 974–977).<sup>2</sup>

Israel's last major confrontation with its Arab neighbours, the Yom Kippur War, shocked everyone. The IDF ultimately prevailed militarily, but not strategically or politically. Israeli expectations were greatly surpassed by the large number of fatalities and lost equipment. Society exploded in fierce criticism of the IDF's leadership and operations. Although actual combat experience was still preferred, the IDF revised its teaching approach following the Yom Kippur War in addition to changing force composition (Cordesman, 1987, pp. 45–53). For the first time in the IDF's history, integrated officers' courses on different arms made an appearance (Kan-Tor, 2017). The Command and Staff Academy was reformed. The National Defence College for studying Israel's strategic and security environment was re-established. Nevertheless, the IDF still did not pay enough attention to officer education, as there was a perception that constant wars and border skirmishes were the best way to gain battlefield experience. This state of affairs was challenged by Moshe Levi, 12<sup>th</sup> chief of staff, who designed a new educational programme called Barak<sup>3</sup> to enhance military professionalism in the IDF (Libel, 2016, pp. 9–10). Time devoted to the study of military theory doubled compared to previous courses and rose to 512 hours (26% of the curriculum) (Libel, 2010, p. 218).

After the Yom Kippur War, Israel entered an era of asymmetric wars which had a declining intensity. The First Lebanon War started in 1982 and revealed an extremely high proficiency in symmetrical warfare, especially for the Air Force, but less so for the Land Forces. An operation in Bekaa Valley showed in particular that the lessons of the Yom Kippur War were fully absorbed. Without losing a single aircraft, the IAF destroyed 19 SAM batteries in the first two hours of the combat in the Bekaa Valley and shot down over 20 enemy MIGs in the next few hours (Adamsky, 2010, pp. 94–95). Unfortunately for the IDF, a conventional campaign quickly degenerated into irregular warfare with the PLA (and after September 1982 with the Shiite militias), ending in a long-term conflict that almost no power could win in the 20<sup>th</sup> century. Then, the First Intifada came in 1987. This was a wholly new type of conflict for which the IDF was unprepared. With the end of the Cold War quickly approaching, Israel found itself in a dramatically changed security environment. Arab states surrounding the country were either United States' allies (Jordan, Egypt)

<sup>2</sup>Six of the seven plans for the defence of Sinai developed by the Southern Command between 1967 and 1973 came to an end with the IDF crossing the Canal, regardless of the force configuration (either two brigades or two divisions), and only an offensive against Syria was taken into consideration (Murray, 2011, pp. 272–273).

<sup>3</sup>Barak means Lightning in Hebrew.

or stopped being foes. Syria, lacking Soviet support, was becoming much weaker although its military potential, as well as its attempts to acquire WMDs to offset the IDF's conventional superiority, were considered dangerous well into the 2000s (Cordesman, 2006). Lebanon was no longer considered a threat, or rather a base for threats, after the occupation of its southern part by the IDF made northern Israel relatively safe.

## Transformation of the Israeli military doctrine

By the early 1990s, it was clear the IDF was in need of a fix. The armed forces had been preparing for High Intensity Conflicts (HIC) for the past 40 years, which were supposed to be solved with a concentration of large round forces supported by the air force, followed by a rapid movement towards the enemy's territory, the conquest of territory, and overpowering the enemy's ability and will to fight. One of the main assumptions was that there would be a "blue sky" i.e. full air superiority of the IAF and the home front secured from aerial attack. These basic ideas behind an unwritten military doctrine were guiding the IDF's efforts in preparation for future wars (Winograd report, 2008, p. 269).

The Winograd Commission<sup>4</sup> identified six trends that were transforming traditional Israeli conduct of war:

- The change from symmetrical conflicts involving conventional armies and independent governments to asymmetrical conflicts involving powerful non-state groups that rely on local populations.
- The Revolution in Military Affairs (RMA), mainly in the air dimension.
- The religious extremism in the Muslim world and the development of the Palestinian terrorist organisations.
- The awareness of the profound changes taking place in Israeli society and the significance of local and global media in the context of strategy.
- The perception that terrorist and paramilitary groups did not pose an existential threat to the State of Israel and, on the other hand, the growing influence of international law and court rulings that limit the use of weaponry.
- The asymmetric conflicts with guerrilla forces require different types of military activity and military deployment than symmetric ones (Winograd report, 2008, pp. 269–270).

Two main themes impacted IDF doctrine heavily. First, the emergence of the so-called American RMA showed its potential during the First Gulf War. High-tech weapons systems, precision ammunition, electronics – all of that promised a wholly new era of military reality in which a decision could be reached quickly, surgically, and without excess casualties for all parties – defender, offender, and civilian population. Second, the "Palestinian problem" was intensifying. This led to Low Intensity Conflict (LIC) coming to Israel both from inside (West Bank, Gaza) and outside (Southern Lebanon).

<sup>4</sup>"The commission of inquiry into the events of military engagement in Lebanon 2006" was a committee of inquiry established by the Israeli government, presided over by retired judge Eliyahu Winograd, which looked into the 2006 Lebanon War and published recommendations for both the military and the government.

## Transformation of the IDF

In 1993, a new school of thought started to appear in the IDF and especially in the Doctrine and Instruction Department. Its head, Lt. Gen. (Ret.) Jacob Or, appointed Brig. Gen. (Ret.) Dov Tamari, Brig. Gen. (Ret.) Dr Shimon Naveh, and Dr. Zvi Lanir to create an educational project for a more thorough understanding of the strategic and operational level of war. This led to the founding of the Operational Theory Research Institute (OTRI) in 1994. The OTRI had three main aims:

1. to create and disseminate an operational-level-of-war doctrine;
2. to carry out a thorough examination of issues at the operational and strategic levels of warfare and create appropriate military doctrine;
3. to create and implement an operational level of war educational programme (the Advanced Operational Command and Staff Course, or AOCSC), as well as short training sessions on the operational and strategic levels of conflict thinking ([Libel, 2016, p. 10](#); [Report of Israel State Comptroller, 2006, p. 61](#)).

The Institute enjoyed almost total autonomy and could operate in full intellectual freedom to create a different perspective on Israel's security strategy. The sources of knowledge on which the OTRI was building its ideas were varied and many. They included a theory of architecture, a postmodernist/post-structuralist philosophy, a Soviet operational art, and a general systems theory (GST).

## What is design?

Design is simply a way of tackling a problem. The literature on that phenomenon is rich, especially in the business area. There are several concepts on how the design process should look which share some common themes:

- A problem (issue, need) appears which requires a better understanding of current reality.
- A description of the problem.
- Identification of possible concepts solving the problem matching resources and capabilities.
- A test of a concept (a prototype).
- An iteration process until the final design is achieved ([De Spiegeleire \*et al.\*, 2014, pp. 16–19](#)).

While civil and military designing share many similarities, there are of course some differences. Non-defence communities have much more flexibility especially in testing possible solutions (prototypes) on a low-cost basis without immediate risk to life and property. Additionally, failed concepts do not threaten national survival.

## Systemic Operational Design

The key person in the creation of the new IDF doctrine was Brigadier General Shimon Naveh. He started his career in paratroopers just before the Six-Day War. Since then,

he has taken part in each of Israel's wars and enjoyed a steady path of promotions up to a divisional command. In 1997, he published his King's College in London Ph.D. dissertation under the title "In pursuit of military excellence. The evolution of operational theory" (Naveh, 1997), which was later translated into Hebrew and won him the Yitzhak Sadeh Prize for Military Literature. Under Naveh's leadership, the OTRI created Systemic Operational Design which was taught to six courses of 105 officers throughout the 1996–2002 period (Report of the State Comptroller, 2006, p. 62).

The OTRI's model of operational art consists of a strategic sponsor, operational architect, and tactical artisans. The strategic sponsor gives directives that are often ambiguous or open to interpretation. Hence, the role of the operational architect is crucial as it is he who translates political goals into military objectives in a changing environment. On the techno-tactical level, the tactical artisan employs largely fixed concepts and tools to reach the end-state described by the architect (Naveh, 2007, pp. 80–89).

There are different descriptions of the SOD term that co-exist. Additionally, there is no official authoritative IDF definition of the term. The best description was given by SAMS students who worked with Naveh in a workshop on SOD:

"Systemic Operational Design (SOD) is an application of systems theory to operational art. It is an attempt to rationalise complexity through systemic logic employing a holistic approach that translates strategic direction and policy into operational level designs. SOD focuses upon the relationships between entities within a system to develop a rationale for systemic behaviours that accounts for the logic of the system, facilitating a cycle of design, planning, acting, and learning. This is accomplished through seven discourses, leading to a holistic design of an operation that will facilitate planning" (Sorrells *et al.*, 2005, p. i).

Seven sets of organised discourse are used in the SOD process. They are split into two primary components, each of which has a number of connected subcomponents. Discourses work from the broad to the narrow, the abstract to the concrete, helping the design team to reach a final conclusion i.e. design. Although there is a procedure for the following steps, the process is not fixed. Depending on the topic being discussed, switching between discourses is fluid, iterative, and recursive.

**System framing (major component 1)** – because our world is a system of systems, the designer has to comprehend the various, intricate interactions taking place within it. Based on a broad knowledge of global connections and the strategic directives handed over by

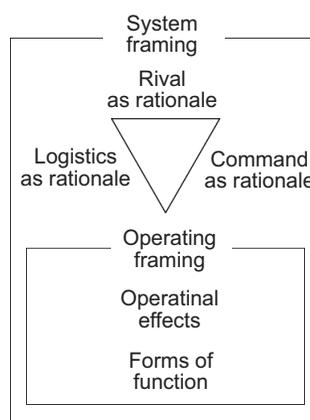


Figure 1. SOD discourses (Sorrells *et al.*, 2005, p. 23).

the strategic sponsor, he or she must narrow (frame) the system for study and action by creating the intellectual boundaries. Based on many inputs, the designer formulates ideas, explains his or her way of thinking, and projects logical trends. The final product is a document in which the designer's understanding of the directive of the strategic sponsor is revealed.

**Rival as rationale (subcomponent)** – the designer tries to develop an understanding of the rival as a system through critical discussion. A discourse on the goals, values, and practices of the opponent is required and how his or her worldview is constructed and his or her actions are organised. Lastly: “through artistic interpretation, the designer characterises the elements that comprise the rival as a system within the logical boundaries of the problem as determined in system framing” (Sorrells *et al.*, 2005, p. 25).

**Command as rationale (subcomponent)** – the designer examines the relationship between existing command structures and their suitability for the planned course of action which is known from the system framing. While taking into account the uniqueness of the issue under study, such considerations should be based on existing structures and formations.

**Logistics as rationale (subcomponent)** – the designer examines the relationship between existing resources and their suitability for the planned course of action which is known from the system framing. Such considerations should be founded on existing structures and formations while taking into account the uniqueness of the situation under investigation.

**Operation framing (major component 2)** – based on strategic logic determined through discourses in the system framing phase, the designer translates the directive of the strategic sponsor into an operation. The form of operational manoeuvre must be contemplated in the context of rival, command, and the logistics system defined previously. The end-state of the operation reflects the desired effect expected by the strategic sponsor and its achievability through the use of force. The tension between the two needs constant operational learning (reframing), which makes the shaping of the system in the designer's favour more probable.

**Operational effects (subcomponent)** – the tensions in an opponent's system discovered during the “rival as rationale” discourse is to be exploited through operational effects that should lead to the desired end-state. Throughout the operation itself, a constant learning system must be created to recognise new possibilities or threats, events, and changes in the environment. These may mandate a new design.

**Forms of function (subcomponent)** – each operational effect is given shape and structure (form). It has to be followed by the planners and translated into physical activity in the form of tasks.

SAMS students who attended workshops with Shimon Naveh had to conduct SOD on two selected historical case studies: Operation Torch and the re-capture of the Philippines in World War II. Their findings were that the Systemic Operational Design is still in its infancy despite being developed in the IDF for more than 10 years; the language used in the designing process is hermetic and not well customised with military vocabulary; and more than a basic knowledge of GST and philosophy is required to understand the systemic nature of war as presented in the SOD without mentioning the economy, anthropology or cultural problems.

The SAMS team only designed the operations and handed over the design to the planners who had problems implementing it. Although the SOD let the students learn constantly due to iteration loops built into the discourse procedure, the organisation (planning staff and tactical level units/commanders) as a whole did not really benefit from this better understanding of an operational issue. Both linear (traditional, analytical) and non-linear (constructive, visionary) types of thinking had to be involved – which was considered too difficult for officers who had qualifications from the Intermediate Service School (i.e. the majority of officers).

On the other hand, the SOD was flexible and holistic, hence better understanding of the operational problems occurred and only small teams of trained officers were needed. It was also possible to achieve a better link to the non-military strategic planning system. The conclusion noted that the complexity of the modern environment has always existed and that the nature of warfare has not altered. The SOD was considered by SAMS students as an alternative way of designing the campaign with a richer understanding of an operational commander and how he may impact a broader dynamic system. Unfortunately, the design process in itself was complicated and not easy to understand, follow or use to implement the final product i.e. the operational design (Sorrells *et al.*, 2005, pp. 29–44).

## Lessons from the Second Intifada

The operations of the IDF during the Second Intifada, especially in the West Bank, are “proof” of the SOD and the OTRI’s ideas working in the real world. Proponents of Systemic Operations Design believe that the changed method of operational planning established in 1998 by Major General Moshe Yaalon – commander of CENTCOM,<sup>5</sup> introduced new abilities to the IDF’s Central Command and a more thorough understanding of “operational effects” needed to establish a security environment in favour of Israel in the West Bank. Colonel Aviv Kochavi,<sup>6</sup> commander of the Paratroopers Brigade at the time, is then often quoted. In April 2002 in Nablus, he “reinterpreted the space” through “inverse geometry” and “reorganised the urban syntax by a series of microtactical action” (Weizman, 2006, pp. 8–9). Simply put, paratroopers attacked Palestinians from many sides and moved inside the buildings and blew up the walls. Israeli operations in Nablus enjoyed success and a new era of philosopher-soldiers (Adamsky, 2010, p. 101), who based their knowledge on OTRI teaching, was heralded. Kochavi’s achievements were real – his well devised tactics dramatically reduced the IDF’s losses and assured Israeli decision-makers that Operation Defensive Shield would not be costly in terms of human life so, in a week, all major West Bank cities were occupied by the IDF.

For each and every serious military historian, “walking through walls” in Nablus is nothing more than the reinvention of a wheel. A visit to a library and reading Patton’s memoirs<sup>7</sup> or works on urban warfare during World War II – Stalingrad, Ortona, Aachen, the Warsaw Ghetto Uprising etc. would save Kochavi’s time. Refreshing well-known ideas and putting them into current context is much simpler than devising everything from scratch using pseudo-philosophical jargon.

<sup>5</sup>CENTCOM (Central Command) – one of the three area commands in Israel. The other two are the Southern Command and the Northern Command.

<sup>6</sup>The IDF’s former chief of staff (2019–2023), Aviv Kochavi, ended his military career with the rank of Lt. Gen.

<sup>7</sup>Patton discusses small units tactics for street fighting in his diary and they are similar to those used by Kochavi’s paratroopers (Patton, 1975).

The SOD sceptics indicate that “victory” in a conflict with poorly armed Palestinians in a situation of almost total technological and intelligence superiority (Kober, 2008, p. 15), as well as the real strategic decisions taken by the government i.e. building a security wall and abandoning Gaza settlements, was never in question. Tactical proficiency and new concepts for urban fighting certainly helped but never were decisive in themselves.

## Naveh’s systemic operational art

Brigadier General Shimon Naveh was not a very prolific author. Apart from the above-mentioned thesis “In pursuit of military excellence”, there are two more publications in English (Naveh, 1996, 2007) and a few interviews (Feldman, 2007; Weizman, 2006). Two main themes presented by him focus on Soviet operational art and the General System Theory. Naveh tried to achieve a fusion of both concepts claiming that Soviet military thinkers were systemic to the core and their creation, i.e. “Deep battle/operation,” assumes (although unconsciously) the systemic nature of operational art. According to Milan Vego, this is a false assumption and bears no resemblance to what Soviet theoreticians really wrote (Vego, 2009, pp. 70–71). On top of that, Naveh and other authors (Hazani, 2011; Lanir, 1997) also described Soviet operational art as something that came into being by the simple fact that several theoretical books were printed in the 1920s and 1930s. The real “deep battle” never came into being on the battlefields of Eastern Europe during World War II. The abysmal performance of the Soviet Army on a tactical level for most of the war made it augment operations with tremendous firepower and huge masses of troops and equipment. This was an extremely wasteful way of conducting campaigns instead of operational virtuosity as described by Tuchachevsky, Isserson, or Triandafillov. It was confirmed in Martin Van Creveld’s review of Naveh’s book: “The book is not easy to understand (...). As a historical description of the development of military art, the book may be interesting for the professional reader, although it is difficult to read and not always convincing” (Van Creveld, 2001). Even more critical was Niklas Zetterling, a famous researcher of the Eastern Front in World War II. He crushes Naveh’s book in his review in so many areas (GST theory, logic, facts, research etc.) that one is struggling to understand why it is so widely accepted as such a great achievement (Zetterling, 2002). Probably not many people really read it carefully to the last page and due to its ambiguous language and lack of scientific rigour, they didn’t even fully understand it.

What Shimon Naveh did was to deconstruct Soviet Operational Theory using (distorting) the GST (Vego, 2009, p. 70). The foundation on which he built SOD and his version of Israeli Operation Theory was not firmly connected to military history but only to a few case studies. These were the German Blitzkrieg campaigns (a negative example) and the First Gulf War (a positive example). According to Martin Van Creveld, both were “almost completely irrelevant, as a guide for the future” (Van Creveld, 2001). While for more than 20 years, Martin Van Creveld was right – there were no operational-level high-intensity conflicts and wars waged across the world were rather asymmetric ones against insurgents or terrorist groups. The Russian attack on Ukraine in 2022 leaves his opinion open to question. Apart from that, Russia, as always, is unable to conduct mechanised operations with any level of virtuosity, which is an additional reason to treat Naveh’s book with even more restraint.

The OTRI community succeeded in the creation of an intellectual atmosphere in which the operational art finally found its place in the IDF. The problems faced by the Israeli army, e.g. in the Yom Kippur War, were properly addressed, although not solved. The path taken by Naveh and his colleagues was not comprehended properly by the officer corps due to faulty language, ambiguity, and pseudo-intellectualism. Additionally, the Israeli

Operation Theory was not framed in military history and thus lacked any real foundations and this will be explained below.

## Impact of the SOD on 2006 Operational Concept

Although the IAF enjoyed great success in the Beqaa Valley in 1982, no revolution in the army followed. The land forces were still focusing on the High Intensity Conflicts with masses of tanks supported by the air force. Even the 1991 Gulf War did not immediately push the IDF towards an American-style, technological RMA (Marcus, 2018, p. 127f). Nevertheless, the seed was sewn and, according to Dima Adamsky, it was the OTRI that started a conceptual revolution in the IDF which included an appreciation of Soviet operational art, systemic operational design, and, finally, technological RMA.

“Conceptualisation of warfare in general systems language provided, according to the OTRI, the most relevant analytical lenses to deal with a complex and chaotic operational environment. They believed that this theory would enable translation of abstract strategic directives into mechanical tactical missions, and vice versa – linking all the tactical engagements together to achieve the strategic goal. The battlefield decision, according to this school of thought, was not necessarily occupation of territory or destruction of enemy forces in an integral battle of annihilation, but neutralisation of an enemy system’s logic by the triple operational strike (...) *fragmentation strike*, which isolated an enemy’s military subsystem from the strategic supersystem and disrupted its consolidating logic; *simultaneity*, which coordinated actions across the spectrum of operations, to shock and paralyze an enemy system; and *momentum*, exploitation of the synergetic effect produced by fragmentation and simultaneity, in order to deny the opposing system response time, ultimately causing it to break down” (Adamsky, 2010, p. 101).

Ironically and quite opposite to what Adamsky presents, the OTRI influence was never widespread and concentrated in CENTCOM under General Major Moshe Ya’alon and officers attending AOCSC – with no impact whatsoever on the other two regional commands and military branches (Tamari and Califi, 2009, p. 33). But when Yaalon was promoted, first to a Vice Chief of General Staff, and then in 2002, to the position of 17<sup>th</sup> Chief of General Staff, new ideas followed him.

Fascination with RMA, urban studies, systems analysis, postmodernist philosophy, and cybernetics came at a cost. Israeli officers, influenced by the OTRI ideas, neglected the studies of classical military thinkers. Theory was never held in high esteem in a very practical Israeli society and the impact of the OTRI further eroded knowledge of the art of war history. Without a solid foundation in military theory and history, the IDF officer corps was less and less capable of evaluating the impact of the new concepts on the achievement of the political/strategic goals of the State of Israel.

The SOD and Naveh’s version of operational art became the basis for the creation of the “Operational Concept” – a document which was partly military strategy and partly military doctrine (Libel, 2016, pp. 12–13; Tamari and Califi, 2009, p. 35). It had a strong technological focus:

“Stressing the ascendancy of firepower over manoeuvre, it focused on achieving battlefield success via a combination of accurate, stand-off fire and limited operations on the ground; the need to affect the enemy’s consciousness; the central role played

by airpower; and the diminishing role of large-scale and deep ground manoeuvres” (Kober, 2008, p. 18).

Also, instead of a frontal collision of forces and breaking through the enemy’s defences, the idea of Net Centric Warfare (NCW) with simultaneous use of “molecules” made of all branches of the Army in the entire depth of the battlespace hitting the opponent in a multitude of separate pressure points appeared. This would have caused a rival system collapse. The main effector was supposed to be the Special Forces using sensors to indicate targets for the IAF.

The draft of the concept was published in 2005 and after another round of discussions, the final version was published in April 2006, shortly before the Second Lebanon War. A new Chief of Staff, Dan Halutz, signed it after brief discussions in the General Staff officers’ forum (Tamari and Califi, 2009, p. 33). This was the first written strategic/operational-level document in the IDF’s history, i.e. 58 years. It combined a number of different conceptual papers – chapters on the nature of war, principles of the traditional Israeli security concept, new ideas on the use of military force, an operational view on the Israeli theatre of war, and determinants of force building. Such an attempt was quite ambitious and the main innovation was the creation of the connections between the various ideas that developed in the IDF into an overall and formal systemic concept (Friesler-Swiri, 2017).

General Major Dan Halutz replaced Moshe Ya’alon in mid-2005, he was the first, and still is, and only Air Force general to lead the IDF. Admiral David Ben-Bashat, commander of the Navy during the Second Lebanon War, praised him:

“For the first time, maybe for the last time in the near future, the chief of General Staff came from the Air Force. And the reason that I believe that he came from the Air Force is that he was a very talented person. We all admire our Air Force and I believe that Ariel Sharon decided to put him as chief to try to make the IDF more efficient” (Ben-Bashat, 2018).

According to Shimon Naveh in a press interview, he was “zero”, “criminal”, “a piece of nothing” (Feldman, 2007),<sup>8</sup> all due to not understanding properly the depth of the “Operational concept” and failing to apply it during the Second Lebanon War. According to Milan Vego, Halutz came to command the IDF with the proven concept of an Effects Based Approach to Operations (EBAO) which he successfully employed in the IAF, hence he focused on what he knew best (Vego, 2009, pp. 72–73). Proponents of an EBAO thought that the opponent might be rendered absolutely immobile by precision air attacks against vital military assets, necessitating the use of very few or no land forces (Matthews, 2009, p. 11). Whatever the cause, the effect was that the 2006 “Operational concept” was short-lived because it was created by a small cadre of officers and generals who failed to diffuse the idea. The coincidence of the introduction of the military doctrine, which was quickly followed by the lost war, made no one regret it was gone. Especially that the OTRI, after the State Comptroller report, was disbanded in the aura of a scandal in 2005 and all leading personalities behind the SOD were relieved of their duties.

The proponents of the OTRI were shocked by the closing of the Institute (Glick, 2006). But apart from financial irregularities, there were much more serious allegations. The comptroller found that from 1993 to 2005, the Institute did not issue a single

<sup>8</sup> After the interview was published, General Halutz declined to comment on it. A similar recognition of the Chief of staff was made by Naveh in an interview for Matt Matthews (Matthews, 2009, p. 12).

publication in the field of systemic doctrine, and General Tamari admitted that “there is a basic book, written by one of the OTRI researchers, which is used as a compulsory book in many military colleges abroad, but not in IDF courses and colleges;” he probably meant Naveh’s book on operational art ([Report of Israel State Comptroller, 2006](#), p. 61). The Institute’s head provided an explanation for the paucity of publications that “systemic knowledge is undergoing constant change,” and that “the language in the operative field changes with great frequency, which creates didactic difficulty in instruction, implementation, and writing” ([Report of Israel State Comptroller, 2006](#), p. 62). What is more, the OTRI did not teach systemic doctrine properly (or at all after 2002) because: “teaching of the subject in the format and manner carried out by the members of the OTRI, failed (...) OTRI does not educate the senior officer in the field of the art of war (...) and does not take part in teaching systemic thinking” ([Report of Israel State Comptroller, 2006](#), p. 63) Yehuda Wegman summed up these findings as follows:

“However, though it failed to formulate any active combat doctrine, the Institute succeeded in imparting – all too well – that language in general, and accepted military language in particular, limits the creative thought of combat planners. With the blessing of the chiefs of staff, the commanders learned a new language that generated new processes in the IDF that were seemingly progressive but in reality created practical and intellectual anarchy” ([Wegman, 2007](#), p. 24).

## The Second Lebanon War and the SOD

The failure of the Second Lebanon War cannot be attributed to any single cause. There were many and varied reasons which prevented the IDF and the State of Israel from achieving their goals. They included the SOD idea and the faulty (or misunderstood and underutilised) “operational concept” which the IDF Chief of staff allegedly did not understand ([Matthews, 2009](#), p. 12). The post-war analysis by Avi Kober mentions:

- a delayed realisation that it was a war not a retaliatory attack
- adherence to post-heroic warfare (minimum casualties)
- the IDF’s poor fighting standards due to its focus on policing missions and lack of proper training
- the adoption of the idea that controlling territory is as good as capturing it
- poor generalship
- hesitant and inexperienced political leadership ([Kober, 2008](#), pp. 8–9).

It also appeared that the OTRI, which created a new Israeli Operational Art, did not prepare the officers for war. Although the commanders had a lot of experience in policing Gaza, the West Bank etc., they were not able to switch their mindset to the goal of “mission accomplishment” and were too much risk-averse for a war with the Hizballah ([Kober, 2008](#), pp. 14–15; [Wegman, 2007](#), p. 25). A very interesting fact is that the operational art was almost non-existent. The IAF did not co-operate properly with the Land Forces that could not synchronise their own tactical movements with intelligence while logistics were much too centralised. All in all, there were too many words and too little efficient operational staff work. The language of the SOD and the “operational concept”

was probably one of the main problems affecting the whole IDF during the Second Lebanon War:

“Field commanders did not like the new doctrine, principally because they didn’t understand it. Of the 170 pages long document, many experienced officers didn’t understand more than a half (...) The terminology used was too complicated, vain, and could not be understood by the thousands of officers that needed to carry it out... The new terminology and methodology was supposed to be limited to the higher levels of command (...) Nevertheless, it trickled down... Commanders need to speak in a simple accessible manner, composed essentially of two things: what do we occupy and what do we blow up. This is understandable. When an order is given to render the enemy “incoherent” or to make the enemy feel “distress” or “chased down” or to “achieve standoff domination of the theatre” field commanders simply do not know what to do and cannot judge how well or how bad they are progressing” (Matthews, 2009, pp. 11–12).<sup>9</sup>

Additionally, the Israeli commanders lost contact with the troops and terrain as there was a tendency to run battles from the headquarters in the rear not from the field, as was customary in Israel’s wars in the past. General Sharon’s operations in the Six Day War come immediately to mind as an example of a commander closely following his troops in a halftrack on the battlefield (Przybyło, 2020, pp. 315–350). The conduct of the campaign on a plasma screen in 2006 gave a false picture of precision munition doing all that was needed. If one adds massive use of conventional firepower delivered by the artillery and the air force, it is clear that a desire for operational manoeuvres in the Land Forces was low. This led to taking control of the territory instead of capturing it. Without “boots on the ground,” preventing the firing of rockets on Israel was not possible. The assumed systemic effect of a multitude of attacks on many pressure points failed. With the passing years, a more nuanced estimation of the 2006 Lebanon War is starting to appear in the public space. With all the allegations regarding the IDF’s performance holding true, the deterrent effect continues to this day (Lambeth, 2012). This is the effect of the powerful tools used rather than the power of the mind behind the intangible assets.

## Lessons learned and conclusions

**W**hy did the SOD (and OTRI) fail? There are many reasons for such an outcome. The findings from this research are summarised below and are interspersed with some conclusions on how militaries should proceed in similar cases to avoid traps evident in implementing SOD.

The IDF correctly identified problems with its doctrine and military strategy at the beginning of the 1990s. It took more than 10 years to prepare the first-ever written military doctrine which was published in 2006. It seems that the “doctrinal pendulum” swung to the opposite extreme - from the state of “no written doctrine” to the state of “overintellectualised, pseudoscientific doctrine”. The 2006 “operational concept” failed in the Second Lebanon War but the pendulum was losing its energy and through some iterations found itself in equilibrium – this we can judge looking at the IDF’s operations and strategy from 2006 onwards.

<sup>9</sup>Based on Matt Matthews’ interview with Ron Tira.

The activities of the OTRI and personalities involved, of which Shimon Naveh was probably the most prominent, were sent in many different (although linked) directions:

- creation of military doctrine for the IDF – “Operational Concept 2006”
- creation of an intellectual laboratory for the introduction of operational art into the IDF –Israeli Operational Art
- creation of the process in which strategic directives are translated into physical/tactical action through the medium of operational art in a complex environment – the Systemic Operational Design.

The new ideas propagated through the OTRI were unfortunately unintelligible, ambiguous, and without good scientific foundations. There are no shortcuts to knowledge and wisdom, and this is exactly what Naveh and his colleagues proposed – a shortcut. Instead of serious, broad (and laborious) studies which could have built proper doctrines, they used intellectual tricks to beguile military and political decision-makers. The best example of such a trick “walking through walls” has already been mentioned and should be obvious from the lessons of history but not from postmodernist “reinterpretation of space”. What is interesting is the fact the SOD’s areas of study were thought out correctly but the methodology was wrong. Instead of interdisciplinary studies (military, social sciences, economics, international relationships, etc.), the OTRI used postmodern philosophy, architectural studies, anthropology, cultural studies etc. (Naveh, 2007, p. 88). Introduction of the General Systems Theory or the Complexity Theory into strategic and operational thinking was an interesting idea, in line with the trends in US military thinking at that time (Alberts and Czerwinski, 2002; Czerwinski, 1998). Those concepts were enriching for military studies but were never a breakthrough, as any historian or military scientist could find such ideas in military classics like Clausewitz’s “On War” or among contemporary SAMS students: “the nature of warfare has not changed and the complexity experienced in the contemporary environment has always been present” (Sorrells *et al.*, 2005, p. 44).

Broad knowledge and appreciation of the world’s complexity which comes from reading books, studying problems, and experience becomes indispensable at the higher echelons of command. Only officers seeing beyond the current orders and state of affairs can succeed in leading the troops to success.

The OTRI was functioning in an environment in which practicability was valued much more than theory, so they should have to look vigorously for ways to educate the officer corps. Even if one only takes into account the top tier of the IDF (colonels and brigadiers),<sup>10</sup> there were thousands of officers of such grade in the period under investigation (1994–2005). With only six courses and 105 attendees, the OTRI had no chance of making an impact on the Israeli military community. Moreover, the Institute simply stopped running the AOCSC after 2002. Such exclusivity made no sense in Israel where the turnover of officers is quick and almost none of them is in service after 40. In 2006, during the Second Lebanon War, only half of the attendees on OTRI courses were still in service (Report of the State Comptroller, 2006, p. 62). Even the support of the chief of General Staff General Moshe Ya’alon was not enough to promote Naveh’s ideas in the Land Forces, not to mention the Air Force or the Navy.

<sup>10</sup>In reality the attendees were also majors and lieutenant colonels (Report of the State Comptroller, 2006, p. 62).

The Concept was half-baked – it was an iteration in the process of the IDF changing its approach to warfare. Although Naveh and the OTRI were purged by Gen. Halutz (Marcus, 2018, p. 180), they succeeded in imprinting many systemic concepts in new Israeli military doctrine but never reached critical mass to ensure the continuity of their warfighting philosophy. The overlap with conflicting ideas of the new Chief of Staff created an intellectual mess that resulted in confusion and disorder on the battlefields of the Second Lebanon War.

Gradual education of the officer corps in the military science, i.e. theories, classics, and history, so the commanders are not surprised with the terminology and definitions of the operational art or strategy after they are promoted from tactical level. The study of history tempers materialist or mechanistic appliance of military force based on the newest technology or sheer firepower and ensures a safe distance from technicism is maintained. Additionally, all fancy new theories seen through the lenses of historically-minded officers would probably lose much of their charm. As General Mattis remarked:

“Ultimately a real understanding of history means that we face nothing new under the sun. For all the “Fourth Generation of War” intellectuals running around today saying that the nature of war has fundamentally changed, the tactics are wholly new, etc., I must respectfully say: “Not really.” Alex the Great would not be in the least perplexed by the enemy that we face right now in Iraq, and our leaders going into this fight do their troops a disservice by not studying (studying, vice just reading) the men who have gone before us. We have been fighting on this planet for 5000 years and we should take advantage of their experience” (Murray and Sinnreich, 2006, p. 7).

Language must be concise, clear-cut, simple, and understandable. There cannot be different sets of vocabulary for different levels of the art of war, as seen in the Second Lebanon War such phrases, concepts, acronyms, or words would trickle down to units on the ground and create confusion which would hamper mission execution. The utmost care should be devoted to new military vocabulary which could be needed when new concepts and doctrines are implemented. Each nation’s military language is so rich that new, fancy wording would almost always be unnecessary.

Naveh himself was certainly not easy to like or follow. Especially when in egalitarian Israeli society, he shared his views on himself and his ideas which were “not intended for ordinary mortals” (Matthews, 2009, p. 11). But not only that! The OTRI did not produce any kind of reference or educational literature on doctrinal and operational subjects even for extraordinary mortals. Exclusivity does not work for the dissemination of doctrinal or operational ideas.

Finally, the “Operational Concept” did not work or the end-users did not know how to apply it. The concept failed on all three levels of the art of war – strategy, operational art, and tactics. The poor performance of the IDF cannot be attributed to the OTRI teachings or lack thereof alone; nevertheless, it was an important factor in the military misfortune that was the Second Lebanon War. General Naveh, who wanted to be seen as a military genius, failed miserably with his creation, i.e. the Israeli Operational Art. This is a sad conclusion considering that he was certainly a brilliant (although controversial) commander and thinker.

Capable institutions are needed to ensure smooth introductions of new doctrines and ways of thinking about the military and so create the state’s military strategy. National level strategy organisation should facilitate dialogue between politicians, the army, the

military industry, research institutions and so on. Such a system should help all parties involved to understand the possibilities and limitations of using military force. It must produce national-level strategy documents describing not only the current situation but also giving guidance for the future. Military level doctrinal organisation should bind national-level strategy documents and the army's internal regulations into a coherent form. The TRADOC from the early 1980s is a good example of how such an organisation should work.

Tactics and mastery of arms are the basis for operational art and strategy, meaning that even the brightest concept would fail if the tactical units are unable to fulfil the ordered mission. One of the greatest assets of the IDF – its tactical proficiency – was neglected before the Second Lebanon War due to a lack of training and the burden of policing tasks. This is a lesson for armies that got “Afghanised”<sup>11</sup> during the Long War on Terror.

The last child of the OTRI, i.e. the Systemic Operational Design, was best summed up by the SAMS students as simply too difficult to use. Additionally, the separation of the designers from the planners made the SOD almost unusable because of the different routines, schedules, and vocabulary used by both groups. The popularity of the SOD concept in many militaries was caused by its exclusivity and the supposed high intellectual abilities that were required to understand and use it. Also, instead of hard learning on the military and the many intertwined issues, which is always long and laborious, the 6-month course could grant you a ticket for promotion if your boss was fond of all the new fashionable ideas. The advantages of the SOD were not many but certainly, it enhanced openness to new ideas, creative thinking, and the need to educate. The learning loop built-in framing discourses was a particularly good invention. The same (or better) effects in designing and planning campaigns could be achieved by simpler and closer to the ground methods.

There is no laboratory for warfighting, hence the need for testing and wargaming new ideas, especially those coming from military champion-states. They are often not relevant for smaller countries both economically and situationally. The battle procedures or doctrines, thoroughly checked on proven grounds and in the classrooms full of bright officers (of the type attending SAMS studies) with reasonable timing, would be of immense value for the militaries. After an initial check of validity, further and greater simulation can take place. The key condition must of course be realism and adherence to facts, not wishes. There should also be a learning loop with the military-level doctrinal organisation.

What the OTRI really accomplished was an intellectual ferment inside the IDF. There is a distant analogy with the situation in the US Army after the introduction of the 1976 FM-105 “Active Defence” doctrine which caused much turmoil inside the officer corps, as well as stimulating intellectual discourse leading to the invention of the Air-Land Battle in the 1980s (Przybyło, 2018, 2019). The effect of the lost war and faulty doctrine were many. Israeli doctrinal and strategic documents started to appear on a regular basis (Finkel, 2020), the IDF's performance rapidly improved, and the operational art found its way into the Israeli Army.

#### **Funding**

This research received no external funding.

#### **Data Availability Statement**

The data presented in this study is available on request from the corresponding author.

---

<sup>11</sup>E.g. in my conversations with a few German officers, they stated that almost the whole Bundeswehr was focused on the stabilisation effort in Afghanistan, which hampered the training for the standard task of defending the country.

### Disclosure Statement

No potential conflict of interest was reported by the author. The author obtained copyright permission for the images published in the paper. The author read and agreed to the published version of the manuscript.

## References

**Adamsky, D.** (2010) *The culture of military innovation. The impact of cultural factors on the revolution in military affairs in Russia, the US, and Israel*. Stanford: Stanford University Press.

**Alberts, D.S. and Czerwinski, T.J. (eds).** (2002) *Complexity, global politics, and national security*. Oregon: Pacific University Press.

**Almog, Z.** (2016) Interview by Łukasz Przybyło, personal communication.

**Ben-Bashat, B.** (2018) Interview by Łukasz Przybyło, personal communication.

**Cordesman, A.H.** (1987) *The Arab–Israeli military balance and the art of operations*. Washington: American Enterprise Institute.

**Cordesman, A.H.** (2006) *Arab–Israeli military forces in an era of asymmetric wars*. Connecticut: Praeger Security International.

**Czerwinski, T.J. (ed.)** (1998) *Coping with the bounds: speculations on nonlinearity in military affairs*. Washington: National Defence University Press.

**De Spiegeleire, S., Sweijs, T., Wijninga, P. and Van Esch, J.** (2014) *What is strategic design?* Hague: Hague Centre for Strategic Studies.

**Drory, Z.** (2005) *Israel's reprisal policy 1953–1956. The dynamics of military retaliation*. Abingdon-on-Thames: Frank Cass.

**Ezov, A.** (2016) *Crossing Suez, 1973: New point of view*. Tel Aviv: ContentoNow.

**Farquahar, S.C. (ed.)** (2009) *Back to the basics. A study of the second Lebanon war and operation Cast Lead*. Kansas: Combat Studies Institute Press, US Army Combined Arms Center.

**Feldman, Y.** (2007) 'Explosive head. Interview with Shimon Naveh', (Hebrew). *Haaretz* 23.10.2007. Available at: <https://www.haaretz.co.il/misc/1.1452796> (Accessed: 10 June 2021).

**Finkel, M.** (2020) 'IDF strategy documents, 2002–2018: on processes, chiefs of staff, and the IDF', *Strategic Assessment*, 23(4), pp. 3–17.

**Friesler-Swiri, D.** (2017) *What can be learned from the process of developing the concept of operations 2006?* (Hebrew). Available at: [www.idf.il](http://www.idf.il) (Accessed: 12 February 2023).

**Glick, C.** (2006) 'Column one: Halutz's Stalinist moment', *Jerusalem Post*, June 8, 2006. Available at: <https://www.jpost.com/opinion/columnists/column-one-halutzs-stalinist-moment> (Accessed: 6 June 2021).

**Hazani, A.** (2011) 'The relation between social processes and the IDF's "operational concept"', (Hebrew). *Ma'arachot* 435, pp. 18–25.

**Kan-Tor, Z.** (2017) Interview by Łukasz Przybyło, personal communication.

- Kober, A.** (2008) 'The Israel defence forces in the Second Lebanon War: why the poor performance?', *Journal of Strategic Studies*, 31, p. 1. doi: [10.1080/01402390701785211](https://doi.org/10.1080/01402390701785211).
- Kober, A.** (2016) *Practical soldiers. Israel's military thought and its formative factors*. Leiden: Brill.
- Lambeth, B.S.** (2012) 'Israel's Second Lebanon War reconsidered', *Military and Strategic Affairs*, 4(3), pp. 45–63.
- Lanir, T.** (1997) 'From operational art to systemic thinking', (Hebrew). *Ma'arachot* 352–353, pp. 2–20.
- Libel, T.** (2010) 'Teaching citizens to be professional soldiers: IDF responses and their implications', in S.A. Cohen (ed.), *The new citizen armies. Israel's armed forces in comparative perspective*, pp. 215–233. Abingdon-on-Thames: Routledge.
- Libel, T.** (2016) 'Explaining the security paradigm shift: strategic culture, epistemic communities, and Israel's changing national security policy', *Defence Studies*, 16(2), pp. 1–20. doi: [10.1080/14702436.2016.1165595](https://doi.org/10.1080/14702436.2016.1165595).
- Marcus, R.H.** (2018) *Israel's long war with Hezbollah. Military innovation and adaptation under fire*. Washington: Georgetown University Press.
- Matthews, M.** (2009) 'Hard lessons learned', in S.C. Farquahar (ed.), *Back to the basics. A study of the Second Lebanon War and operation cast lead, Fort Leavenworth*, pp. 5–44. Kansas: Combat Studies Institute Press, US Army Combined Arms Center.
- Michael, K.** (2007) 'The Israel Defence Forces as an epistemic authority: an intellectual challenge in the reality of the Israeli–Palestinian conflict', *The Journal of Strategic Studies*, 30(3), pp. 421–446. doi: [10.1080/01402390701343417](https://doi.org/10.1080/01402390701343417).
- Murray, W.** (2011) *Military adaptation in war. With fear of change*. Cambridge: Cambridge University Press.
- Murray, W. and Sinnreich, R.H. (eds)** (2006) *The past as prologue. The importance of history to the military profession*. Cambridge: Cambridge University Press.
- Naveh, S.** (1996) 'The cult of the offensive preemption and the future challenges for Israeli operational thought', in E. Karsh (ed.), *Between war and peace: dilemmas of Israeli security*, pp. 168–187. London: Frank Cass.
- Naveh, S.** (1997) *In pursuit of military excellence. The evolution of operational theory*. Abingdon-on-Thames: Frank Cass.
- Naveh, S.** (2007) *Operational art and the IDF: a critical study of a command culture*. Washington: Center for Strategic & Budgetary Assessment (CSBA).
- Patton, G.** (1975) *War as I knew it*. New York: Bantam.
- Przybyło, Ł.** (2018) *Military doctrines. History and evaluation*. (Polish). Warsaw: Wydawnictwo Tetragon.
- Przybyło, Ł.** (2019) 'Building military doctrine based on history and experience: 20th century examples from Germany, France, Israel and the US', in K. Piirimäe (ed.), *Estonian yearbook of military history*, 9(15), pp. 114–150. doi: [10.22601/SAA.2019.08.04](https://doi.org/10.22601/SAA.2019.08.04).
- Przybyło, Ł.** (2020) 'Ugdah Sharon in the six day war', (Polish), in L.M. Nadolski and W. Bartoszek (eds), *Wars and conflicts after 1945*. Bydgoszcz: Muzeum Wojsk Lądowych. Vol. 7, pp. 315–350.
- Report of Israel State Comptroller 2006* (Hebrew) (2006). Available at: [https://www.mevaker.gov.il/he/Reports/Report\\_569/32ece292-d043-40b0-a531-543f8379b5b6/2006-57a-102.pdf](https://www.mevaker.gov.il/he/Reports/Report_569/32ece292-d043-40b0-a531-543f8379b5b6/2006-57a-102.pdf) (Accessed: 15 July 2021).

- Sorrells, W.T. et al.** (2005) *Systemic operational design: an introduction*. Kansas: US Army School for Advanced Military Studies.
- Tamari, D. and Califi, M.** (2009) "The IDF's "operational concept"", (Hebrew), *Ma'arachot* 423, 2009, pp. 26–41.
- The commission of inquiry into the events of military engagement in Lebanon 2006*, Winograd commission report, Jerusalem: (Hebrew). (2008).
- Wass De Czege, H.** (2009) 'Systemic operational design: learning and adapting in complex missions', *Military Review*, pp. 2–12.
- Wegman, Y.** (2007) 'A distorted self-image: on the IDF and its responsibility for civilians', *Strategic Assessment*, 10(2), pp. 23–30.
- Weizman, E.** (2006) 'Walking through walls. Soldiers as architects in the Israeli–Palestinian conflict', *Radical Philosophy* 136 (March/April 2006), pp. 8–22.
- Van Creveld, M.** (2001) 'The campaign is changing its face', (Hebrew). *Haaretz* 16.09.2001. Available at: <https://www.haaretz.co.il/misc/1.734129> (Accessed: 6 June 2021).
- Van Creveld, M.** (2008) *Sword and olive: a critical history of the Israeli Defence Force*. New York: PublicAffairs.
- Vego, M.** (2009) 'Case against Systemic Operational Design', *JFQ* 53, pp. 69–75.
- Zetterling, N.** (2002) *A critique of "In pursuit of military excellence" (Frank Cass, London 1997) by Shimon Naveh*. Working paper. Available at: <https://vdocument.in/in-pursuit-of-military-excellence.html> (Accessed: 15 February 2023).