

## **Operational Design: Imagination Needed in Ukraine**

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It is unlikely that there is one single action that can end the present conflict in Ukraine without it being accompanied by significant unintended consequences. It is, however, highly likely that a particular combination of actions, if executed with precise timing, an acknowledgment of the centrality of the three principal actors—Russian President Vladimir Putin, Ukrainian President Volodymyr Zelenskyy, and the NATO alliance—and an awareness of amplifying effects, could deliver an end to the conflict on terms favourable to Ukraine. This paper analyses the central factors at the operational and strategic levels to highlight purposeful courses of action that could be developed: actions that are linked directly to sought-after changes in the system. This process is complex in the Ukraine situation due to the extraordinary levels of violence, destruction, and offensive actions that are violating the principle of proportionality in military operations. While the United Nations and the Security Council might be included as fourth and fifth actors, these institutions have thus far taken something of a spectator role in the conflict, and are apparently distracted by their own internal and somewhat underperforming mechanisms for arresting conflicts through assertive action, security resolutions, and other legitimate instruments.

The invasion of Ukraine by Russian forces commenced on 24 February 2022. How or when it will conclude remains uncertain as of this writing. After two months of indiscriminate destruction of civilian infrastructure, limited military progress, and an unexpected level of heroism and resistance by Ukrainian forces and citizenry, the West has gradually awakened to what permanent Russian occupation of Ukraine would mean for NATO and Europe as a

whole. Furthermore, Putin's reckless and intentionally threatening mentions of nuclear, chemical, and biological weapons have led his opponents in the West to hesitate about becoming more deeply and actively engaged in the fight.

The Russian forces are engaging in what is essentially an industrial-age approach to war. This includes widespread and indiscriminate destruction of civilian infrastructure, rendering it useless and uninhabitable, which is a key outcome of siege warfare. This cannot be met with a corresponding level of force by Ukraine, which does not have sufficient resources to retaliate and must limit its operations almost entirely to Ukrainian territory. Any long-range offensive actions into Russian territory would attract an even more brutal response. Despite the imbalances in resources and methods employed, all conflict remains a clash of wills and a search for asymmetry.<sup>1</sup> Imagination and elegance in execution can deliver an end to the conflict, but any solution or combination of solutions must include lawfare, grey zone, and hybrid approaches. Any efforts within these approaches must seek to push the system into a new mode of behaviour by altering several of its essential features or parameters.

As stated by Russell Rhyne,

When the future arrives, it may differ wildly from the present in detail, but it will resemble the existing pattern in a few major respects. There will be only one of it—future—and each parameter of change will have a particular value; its parts will coexist within an intricate system of mediating “rules of engagement” ... and it will trail behind its own distinctive history. Its parts will fit together (however uneasily), and its changing patterns will show sequential consistency through time.<sup>2</sup>

What can the West do about Vladimir Putin? What, for that matter, can be done about Bashar al-Assad, Kim Jong Un, Xi Jinping, and other leaders whose ambitions and ideologies collide with those of their neighbours and even their own populations? These are the wickedest, messiest strategic problems, and seem to defy all reasonable attempts to identify a solution, or indeed to achieve any consensus on the means of achieving a solution.<sup>3</sup> Wicked, messy problems also contain the ability to initiate a host of unintended consequences, are not confined to competition or conflict between nations, and confound planners and decision-makers at all levels.<sup>4</sup> We are reminded of Garrett Hardin's observation that "we can never merely do one thing."<sup>5</sup> This point is amply demonstrated by the sudden rise in global food prices, rising debt levels in developing nations, growing fragility of international supply chains, and labour shortages, which have arisen at least in part as a result of economic sanctions imposed to punish Russia's aggression.<sup>6</sup>

This paper highlights a method that invites a deeper and more comprehensive analysis of the operational and strategic environments *before* courses of action are developed. It details a method based on general morphological analysis (GMA), which encourages planners to determine the key factors at work in the system under investigation, along with their conditions, from most favourable to most unfavourable. The paper also introduces the topics of hybrid warfare and lawfare, two asymmetric strategies that could give Ukraine advantages it is unlikely to achieve in force-on-force engagements. Although we are investigating a military problem, GMA has proven useful in a variety of contexts, and may deliver additional insights into what can be done to preserve Ukraine's sovereignty.<sup>7</sup>

While the United States, Canada, Europe, and some allies have individually and collectively mobilised efforts to end the conflict on terms favourable to Ukraine—an immediate cessation

of hostilities and withdrawal of Russian forces to at least their pre-invasion positions—there is little evidence that the primarily economic measures taken so far have been immediately effective. What more can be done? Can the aggressive and ruthless behaviour exhibited by Putin and his inner circle be controlled?



*Russian president Vladimir Putin signing the treaty annexing Crimea to Russia, 18 March 2014.*

In the years and months leading up to the invasion of Ukraine, it is reasonable to assume that Putin consulted with his trusted advisors, asking such questions as, “If we move a large armour and infantry force westward across the Ukrainian-Russian border, what actions might the West take? How far will the West go to preserve Ukrainian sovereignty?” And ultimately, “What is the worst we can expect to deal with, and will it still be beneath our tolerance threshold?” It is evident that NATO and those nations providing military aid in the West have remained restrained and sought to avoid an escalation to a continental war. Putin’s threshold has not been crossed and his actions remain, therefore, in the grey zone.<sup>8</sup>

After several weeks of mixed Russian advances, the efforts of the West to deter further military operations have proven to be totally unsuccessful; indeed, Putin threatens to use nuclear weapons if the West does not refrain from aiding Ukraine. So, the question remains: What more can the West do to force a withdrawal of Russian forces? The threat of indictment as war criminals is unlikely, on its own, to encourage Putin or his generals to terminate military operations. Hyper-wealthy Russians are feeling the effects of financial and other sanctions, yet no changes in behaviour or policy are evident; indeed, a strengthening of resolve, ruthlessness, and determination on the part of Putin appears as an unintended consequence, as he now appears fixated on partitioning Ukraine to secure a partial strategic victory.

## **Achieving Influence**

At the outset, we must declare our conviction that most human behaviours within large social, commercial, and political contexts are influenced through one or more of the following key emotions: fear, greed, pride, and curiosity. As information operations planners, we can attribute success to an attentiveness to these influences and an acute awareness of individuals' vulnerabilities. This extends from the youngest infants, who are just beginning to perceive their environment and their place in it, to the very elderly. These four emotions tap into the deepest regions of the human psyche and invite an array of imaginative actions that seek to shape behaviours in specified ways.



*Ukrainian President Volodymyr Zelenskyy meets with the US Secretaries of State and Defense, 24 April 2022.*

Putin's opponents have yet to display sufficient imagination and acknowledge that these emotions are key drivers of the Ukraine-Russia conflict. The conflict can be viewed as a clash of wills between Putin and Zelenskyy, and as a clash of ideologies. Putin, we suspect, has a strong greed component coupled with his obvious pride, along with a fear of NATO and contempt for the West. These impulses demand further investigation. The search for asymmetry in this clash of wills is where tactical, operational, and strategic advantage can be secured.

Since the end of World War II, the confrontation that became known as the Cuban Missile Crisis of 1962 has been the single security event at an international scale that captured the world's attention. All other conflicts, potential and real, have been localised, involved minor powers, and/or did not include threats associated with weapons of mass effect or destruction. Lasting only 22 days, the Cuban Missile Crisis essentially involved only two individuals: US

President John F. Kennedy and Soviet Premier Nikita S. Khrushchev. It was the embodiment of a clash of wills and a search for asymmetry. The search for a solution was predominantly guided by Kennedy, who had the equally demanding tasks of managing his “biased-for-action” military commanders, and maintaining sufficient space for Khrushchev to perceive his own position relative to that of the United States and develop appropriate courses of action.<sup>9</sup>



*Adlai Stevenson II shows aerial photos of Russian missiles in Cuba to the United Nations Security Council, 25 October 1962.*

## **Operational Design**

The military planning necessary in the Ukraine-Russia situation is heavily dependent on operational design to marry the actions with the environment. The purists’ approach to operational design demands that before any actions are proposed, the operational environment must be *fully* comprehended: not partially, not superficially, but totally known,

with all its nuances and potential interactions anticipated as far as is practicable. The operational environment is a system and, while its emergent properties may remain somewhat opaque, the intended inputs are clearly visible.

The complexities of such a system can only be *managed* and, indeed, remain essential for operational success, as it may prove necessary to increase or decrease the complexities for the adversary to create multiple unsolvable dilemmas (paralysis).

### **The Operational Conditions**

A guiding principle of military planning is that once diplomatic and other measures to deal with an adversary have proven unsuccessful and conditions have deteriorated enough to invite military involvement, the military's primary objective is, through its presence and its actions, to reset the conditions to levels that are considered favourable for its state. The establishment of these favourable conditions allows the military to disengage and other instruments of national power to undertake further appropriate efforts at normalization.

There are both *military* conditions that relate to the various tactical engagements specific to the theatre where the conflict is occurring, and *strategic* conditions that extend from the theatre outwards into the diplomatic and international arenas. Each of these, as we demonstrate below, is independent of the other. However, success or failure in one can create opportunities and threats in the other.

Conditions are altered through actions. Every military action must be connected to the achievement of operational, and eventually strategic, conditions through the construct of first, second, and third order effects. In building these effects chains, however, planners should be cautious about linking what may become excessive levels of abstraction. As noted by William (Billy) Mitchell many years ago:

The advent of air power, which can go straight to the vital centers and entirely neutralize and destroy them, has put a completely new complexion on the old system of war. It is now realized that the hostile main army in the field is a false objective and the real objectives are the vital centers. The old theory that victory meant the destruction of the hostile main army is untenable.<sup>10</sup>

Michael Knight makes the same point in rather more abrupt language:

Strategic bombing bears the same relationship to tactical bombing as does the cow to the pail of milk. To deny immediate aid and comfort to the enemy, tactical considerations dictate upsetting the bucket. To ensure eventual starvation, the strategic move is to kill the cow.<sup>11</sup>

Warden's observation also acknowledges the fact that a strategic outcome in war depends entirely on the relevance and proportionality of tactical actions.

### **Constructing a “Factors and Conditions” Array**

Below is a list of key interacting factors that can combine in known and knowable ways to deliver (or deny) operational success to Russian forces. In developing this list, we posed the very real, immediate, and practical question: “What factors determined the level of

operational failure experienced by Russian forces in the first 40 days of the invasion?” The answer comprises the following and gives insights into what vulnerabilities exist:

Military opposition

Logistics

Command and control

Freedom of movement

Freedom of engagement

Behaviour of civilians

These factors should correspond to the topics that one would cover in a brief description of the system—the operational environment—under investigation.<sup>12</sup> When the factors are arrayed in a table, it becomes possible to describe the different conditions they could exist in. This table is known as a “Zwicky box.” Table 1 shows seven factors across the top that are having a direct effect on the war in Ukraine. Four (indicated by R) relate to the Russian forces’ ability to operate, while three (indicated by U) reflect Ukraine’s means of resistance. The columns are identified with the acronym COMPELS. The columns below the factors describe possible conditions, from the most favourable for Ukraine across the top row to the most unfavourable across the bottom row. The Ukraine-Russia conflict is not at either of those extremes yet, and it may never be; as of this writing, it lies somewhere in between. Our estimates of conditions at around the 54th day of the conflict (19 April) are highlighted in shaded bold italics.

Table 1. Factors and Conditions Array for the Operational Environment around Day 54

<b><u>C</u>ommand and Control</b>	<b><u>M</u>ilitary <u>O</u>pposition</b>	<b><u>F</u>reedom of <u>M</u>ovement</b>	<b><u>B</u>ehaviour of Civilian <u>P</u>opulation</b>	<b><u>F</u>reedom of <u>E</u>ngagement</b>	<b><u>L</u>ogistics</b>	<b><u>S</u>trength of <u>U</u>krainian <u>L</u>eadership</b>

(R)	(U)	(R)	(U)	(R)	(R)	(U)
C	O	M	P	E	L	S
Fragmented and constantly interrupted	Active, constant and effective	Heavily constrained	Steadfast and determined	Ceasefire enforced	Absent	<i>Inspirational and motivating</i>
Frequent interruptions	<i>Effective in isolated areas</i>	Some constraints, no alternates	<i>Pockets of resistance</i>	Inhibited	Inadequate	Intact, lacking influence
<i>Infrequent interruptions</i>	Sporadic activity with limited effectiveness	<i>Some constraints, easily overcome</i>	Broken will and fleeing	Selective targeting	<i>Sporadic availability</i>	Fractured and uncertain allegiances
Seamless and resistant to attack	Inactive, ineffective	Unlimited		<i>Indiscriminate targeting</i>	Brief, minor interruptions	Exiled
				Widespread destruction of infrastructure	Abundant	

A Zwicky box is useful for this kind of analysis because it allows for the detailed investigation of the total set of internally consistent settings by excluding sets of conditions that cannot plausibly exist together.<sup>13</sup> For example, an inconsistent and awkward pairing of conditions in table 1 might be “abundant” logistics and “fragmented and constantly interrupted” command and control. There are many of these inconsistent or illogical pairings and, as they are discovered, they are removed from consideration.<sup>14</sup> While the configuration across the first row of conditions (“fragmented and constantly interrupted,” etc.), expressed in shorthand as C<sub>1</sub>O<sub>1</sub>M<sub>1</sub>P<sub>1</sub>E<sub>1</sub>L<sub>1</sub>S<sub>1</sub>, is entirely plausible, a pattern that replaced E<sub>1</sub> (“ceasefire enforced”) with E<sub>5</sub> (“widespread destruction of infrastructure”) and left all others as is would not be realistic and that particular configuration would be discarded. The 19,200 possible configurations (4x4x4x...) are reduced to ~100 once these rejections are completed.

Within the configurations that survive the filtering process, there is the single configuration that describes the current situation (denoted by the shaded boxes in Table 1); there is also a corresponding configuration that describes the desired set of conditions—what military planners define as the end-state. Our assessment is that a configuration comprising C<sub>2</sub>O<sub>1</sub>M<sub>1</sub>P<sub>1</sub>E<sub>1</sub>L<sub>2</sub>S<sub>1</sub> would place Ukraine in a highly favourable position. There are also numerous configurations between these two that invite consideration of how to get from “here” to “there” through campaigning. The specification of factors and conditions in this manner offers a nicely discriminating illustration of the overall set of conditions that are currently in place, the ones that invite attention to be reset through the application of appropriate actions, and the ones that, if shifted up, set the preconditions for others to be moved in a favourable way with significantly less effort and risk. For example, if the factors of “Command and Control” and “Logistics” could both be nudged up by just one condition, the operational environment would be changed abruptly in a manner highly favourable to Ukraine; indeed, several other conditions could spontaneously reset without specific efforts or actions.

Of particular value for military planners is the ability of these factors to transfer their utility effortlessly into seven lines of operation to which actions can be harnessed. Every action’s value can, therefore, be measured by the extent to which it brings forward desired conditions. A comprehensive collection plan can also accompany the actions and be coupled to the factors without a confusing and multi-layered cause-effect relationship.

Having settled on the key factors in the conflict and their associated conditions, identified the conditions that currently are in place, and agreed on the set of conditions that constitute the desired end state, or what “good” looks like to the observer, it is now a relatively

straightforward exercise to determine which of the factors is most vulnerable to appropriate actions—to satisfy a characteristic of “purposeful” courses of action—that exploit asymmetries. Military doctrine often defines this as “campaigning.”

Both “Logistics” and “Command and Control” invite imaginative thinking about possible actions. However, an idea such as having regular Ukrainian forces engaging Russian logistics convoys with shoulder-fired anti-armour weapons does not pass the imagination test. Such a tactic might well move the “sporadic availability” of Logistics to “inadequate,” but it would be a temporary and localised effect. On the other hand, thousands of shoulder-fired anti-armour weapons in the hands of a coordinated militia adopting hybrid tactics could pose a ubiquitous threat to poorly protected convoys and more comprehensively interrupt the flow of supplies. It would also have an immediate and longer lasting effect on freedom of manoeuvre (fuel) and freedom of engagement (ammunition). Indeed, freedom of engagement is a factor that lends itself to a strong lawfare approach, which will be discussed in more detail later.

The principle of proportionality within the conduct of armed conflict demands that engagements are only permitted against genuine military targets and those that contribute to a tactical advantage.<sup>15</sup> It is no less significant that the determination of whether an engagement is permitted should involve military necessity and precise discrimination regarding possible targets. The indiscriminate destruction of civilian infrastructure, apartments, and other objects of no military significance by Russian forces constitute a war crime and should be actively pursued by referrals to the International Criminal Court. These actions were clearly designed to create an uninhabitable environment for Ukrainian civilians.

### **The Strategic Conditions**

Now that we have a reasonably complete and accurate account of the conflict’s operational factors and conditions, table 2, below, illustrates a corresponding view of the current strategic factors and conditions. We have elected to highlight two vertically adjacent conditions in the Biden column, because events suggest his administration has not adopted a clear position with regard to NATO: sometimes led, sometimes leading. As events unfold, another box for the US administration could be justified: ignoring NATO and taking unilateral action. Without a NATO at “Collective will,” coupled with the United Nations at “Binding resolution, but unenforceable,” a tipping point in the conflict is just out of reach.

Table 2. Factors and Conditions at the Strategic Level Around Day 54

<b>Putin and the Kremlin</b>	<b>Xi and the Communist Party of China</b>	<b>Zelenskyy (Ukrainian Administration)</b>	<b>NATO</b>	<b>Biden (US Administration)</b>	<b>The United Nations</b>
Orderly withdrawal, federated transfer of power	Dissuaded from military aggression and further support to Russia	<i>Calm, measured, and influential</i>	Unified purpose, plan of action	Steadfast, “Kennedy-esque”	Assertive, engaged in peace enforcement
Withdrawal under pressure, forced transition of power	Fractured relationship with Russia	Compromise democracy to achieve military objectives	<i>Collective will, no single plan</i>	<i>Leads a unified NATO</i>	Binding peace resolution, but unenforceable
<i>Siege warfare, outlast</i>	<i>Strengthened relationship, working</i>	Becomes autocratic, sidelines ministers	Disaggregated will	<i>Led by a disunified NATO</i>	<i>Fragmented</i>

<i>Western interest</i>	<i>around sanctions</i>				
Chaotic overthrow of President Putin, nuclear uncertainty	Energised and aggressive	Frustrated, intolerant, and dismissive	Dysfunctional	Withdrawn, disengaged	Paralysed
		Martyr who draws West into nuclear conflict			

The six strategic factors and their corresponding conditions call for the same culling of illogical or awkward pairings described earlier. They also enable an assessment of where the current conditions are (highlighted in shaded bold italic) and how far away from the desired set of conditions, or end-state, they might be. A major tipping point for Ukraine is somewhat out of reach in the current strategic conditions, certainly with respect to the NATO factor. Achieving a “unified purpose, plan of action” may require a UN Security Council resolution that insulates countries from individual sovereignty concerns, although it should be noted that NATO members are showing increasing resolve and “unified purpose” as the war wears on. There are, however, very strong signals out of the United States that significantly more military support may be forthcoming.



*US President Joe Biden meets with the Ukrainian Foreign and Defence Ministers in Warsaw, 26 March 2022.*

Ukraine possesses a fraction of the military resources necessary to engage in full-scale military operations with Russia. It is also experiencing the West's reluctance to attract unintended consequences, including the threat of nuclear escalation, through being too tactically adventurous, i.e., putting NATO troops inside Ukraine's borders. This dilemma suggests that it may be worth looking at alternate means of achieving operational success: a hybrid approach that could include both alternative means of warfighting and the legal strategy known as lawfare.

## **The Ukraine-Russia War and Hybrid Warfare**

The Ukraine-Russia war has raised some debate regarding the success and/or viability of non-linear, often non-kinetic warfighting, an approach that has become known as hybrid warfare

and/or “grey zone” operations. In a 2020 speech, Australia’s then-Defence Minister Linda Reynolds and Defence Chief Angus Campbell both referred to national security risks using those two terms: “What is clear now, is that the character of warfare is changing, with more options for pursuing strategic ends just below the threshold of traditional armed conflict—what some experts like to call grey-zone tactics or hybrid warfare.”<sup>16</sup>

Prior to the war in Ukraine, the overall appetite among the major powers for large-scale interstate military conflict as a means of resolving issues of national security seemed to be diminishing. There are many explanations, not least of which is the loss of life by all participants and the huge costs of both waging war and rebuilding destroyed cities, infrastructure, and economies. Hybrid strategies are emerging as a favoured alternative, reflecting the desire to keep heightened competition below the level of armed conflict.

In the run-up to the invasion of Ukraine in February, Putin had previously used the full capability spectrum of hybrid warfare quite successfully to prepare for the illegal annexation of Crimea and to support the chronic fighting in the two separatist territories in Ukraine’s Donbas region. He also used a broad disinformation campaign in an attempt to weaken any meaningful response from the West in anticipation of the 2022 invasion. Political interference, such as spreading divisive propaganda ahead of UK elections in 2019, disinformation campaigns targeting Western comity and cohesion, economic threats and manipulation of dependencies such as the Nord Stream 1 and 2 gas pipelines to Europe, and the compound-force military approach in the Donbas, are all grounded in hybrid warfare.

Hybrid warfare is also being used effectively by Ukrainian forces against the Russians. Ukraine and its Western allies are combining kinetic warfighting across all domains by the

Ukrainian military and informal militias with a wider approach that mobilises all available and potential resources at the national and international levels, including diplomacy, industrial and economic capabilities, information operations, and even the rule of law.

Examples of Ukraine's successful influence campaign can be seen in Ukraine's dominance of the information war, the ability of international and Ukrainian hackers to target Russian cyber and information warfare capabilities, and Zelenskyy's emotional appeals for global support.

His video addresses to parliaments across the globe and international forums like the EU and NATO have been critical for gathering popular support for Ukraine and influencing political decision makers.

In addition to hybrid and grey zone activities, "lawfare" is emerging as another part of Ukraine's approach to Russia's aggression.

### **Lawfare as a New Element of Operational Design**

Lawfare is the use—and abuse—of the rule of law as a means to achieve political goals without resorting to kinetic offensive actions. It nests well with grey zone activities in the sense that its pressure can be increased or decreased to match an adversary's responses. As escalation continues and the potential for an upward (and undesired) movement in intensity of response becomes more evident, the motivating elements can be withdrawn. The escalation, can, at a critical point, be arrested through judicious adjustments to actions.<sup>17</sup>

China's refusal to recognise the jurisdiction and authority of various international courts allowed it to continue the construction and fortification of previously uninhabitable islands in the South China Sea, leading to the declaration of a greatly expanded Economic Exclusion Zone. This position allowed China to dominate the narrative and obviate dissent originating from within neighbouring countries that are disputing sovereignty over the area of interest.

The malicious exploitation of international treaty law equates to the abuse of lawfare as a weapon, a form of hybrid warfare. It is also possible to use law as a weapon in a positive manner; for example, the “bankrupting of terrorism” refers to a legally defensible tactic of combined US–Israeli anti-terrorism litigation, in the form of civil litigation before a US Federal Court.<sup>18</sup> This suit was directed against terrorist-funding activities, such as direct payments to terrorist groups, and other forms of aiding and abetting, such as the provision of material support, by qualifying such support as “indirect liability” for acts of non-state Islamist terrorism. This tactic was also directed against state terrorism when Russian separatists in eastern Ukraine were held liable for shooting down Malaysian Airlines flight MH-17 as it crossed Ukrainian airspace in 2014.<sup>19</sup>

The Israeli law firm and advocacy group Shurat HaDin was behind a successful lawfare campaign that serves as an example of offensive lawfare used to thwart political opposition. Following the 2008-2009 Gaza War, Israel had imposed a blockade of the Gaza Strip. Human-rights activists began launching several flotillas carrying humanitarian and other aid to Gaza, but in 2010 the ships were forcibly stopped from landing by Israeli security forces. In a bid to prevent another of the annual so-called “peace fleets” from reaching Gaza in 2011, Shurat HaDin lawyers learned that the assembled ships had to be insured under international maritime law before leaving the Greek harbor where they were docked.<sup>20</sup> In a painstaking exercise, Shurat HaDin also documented the necessity for the fleet to have a working satellite communication system in place before sailing. Using US case law, Shurat HaDin identified the US-based company Inmarsat as the fleet’s communications provider, and served notice that the provision of satellite communications to the ships was in contravention of US federal law. The firm suspended service to the convoy vessels as a result of the suit, rendering the

necessary insurance coverage invalid. Shurat HaDin then informed the Greek authorities that the ships were either uninsured or otherwise in contravention of international maritime law. The vessels were not permitted to leave the harbour and, consequently, a substantial part of the flotilla was forced to disband.<sup>21</sup>

This example highlights the role that proactive lawfare can play when used by one non-state actor to prevent another non-state actor from achieving its objectives. More recently, lawfare in the form of a campaign known as boycott, disinvest and sanction (BDS) is being used by non-state actors against the state of Israel on an increasing scale.<sup>22</sup>

## **Conclusion**

This article investigated the operational and strategic environments of the Ukraine-Russia conflict through an approach known as General Morphological Analysis, culminating in the creation of two Zwicky boxes. The first Zwicky box highlights seven key factors associated with the operational environment that could combine to deliver operational failure to Russian forces. The second Zwicky box highlights six critical factors at the strategic level, external to the theatre of operations, that combine to illustrate the degree of success or failure experienced by either side. Beneath each of the factors at the operational and strategic levels is displayed a range of conditions from the most favourable (for Ukraine) to the most unfavourable. We identified the set of current conditions and contrasted them with a set of desired conditions: the end-state that would favour Ukraine. This reasonably precise, complete, and sometimes provocative expression of how things are at a given moment invites a very thorough investigation of how those conditions might be altered: the courses of action that show us how to get from “here” to “there.”

From this analysis, we suggest that actions that result from a deeper understanding of the operational and strategic environments, as described by the Zwicky boxes, and that directly seek to change conditions within each line of operations, will be the most purposeful. In this way, the decision to adopt a particular action is informed by the intended effects, i.e., improvements in the status of that particular set of conditions. Using this approach makes the composition of measures of effectiveness statements straightforward and drives honesty into campaign planning.

We are not suggesting that this should be “the one method” for conducting operational planning; however, it could prove to be a valuable companion method to conventional military planning, and might provide sharper insights into what actions are connected to what parts within the system or area of interest. For those nations actively offering military support to Ukraine, this kind of analysis makes it possible to immediately assess the value of their contributions against those effects sought and those effects achieved.

From this deeper investigation of the operational and strategic environments, we also determined that hybrid approaches and lawfare may be viable strategies to bring to the conflict between Russia and Ukraine. The use of lawfare within the conflict has been disappointing so far, beyond assertions that Putin and his military are routinely committing war crimes. However, there are active efforts to use the law, including maritime law and the seizure of assets, to punish Putin’s wealthy supporters and put pressure on Putin himself. Success against Russian aggression will require creativity, diligence, a clear understanding of the operational and strategic environments, and determination on the part of Ukraine’s allies. These are some of the tools that can help tilt the course of the war in Ukraine’s favour.

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## About the Authors

Dr. Guy Duczynski is an adjunct senior lecturer at Edith Cowan University. He had over 40 years of service in Special Operations, including two operational tours in the counter-terrorism unit of the Australian Special Air Service and a deployment to Afghanistan, before retiring from military service in 2018. He also served in numerous appointments associated with operations, plans, training, capability development and operational analysis branches. His current research is in influence activities, operational design, campaign planning, faction liaison, information operations, capability development, and special operations, and he lectures regularly to strategic and operational-level planners.

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<sup>1</sup> Thomas G. Mahnken, “The Future of Strategic Studies,” *Journal of Strategic Studies* 26, no. 1 (2003): x–xviii:

<https://www.tandfonline.com/doi/abs/10.1080/01402390308559305?journalCode=fjss20>

<sup>2</sup> Russell F. Rhyne, “Projecting Whole–Body Future Patterns: The Field Anomaly Relaxation (FAR) Method” (Menlo Park, CA: Stanford Research Institute, 1971), 2:

<https://files.eric.ed.gov/fulltext/ED049148.pdf>

<sup>3</sup> Wicked, messy problems take many forms, such as terrorism, gun ownership in the United States, single-use plastic products, increasing childhood obesity resulting from processed foods and inactivity, “scientific” whaling in the Southern Ocean, and the transition from fossil fuels to renewables. Rittel and Webber’s paper investigating and codifying wicked messy problems is essential reading for any military planner dealing with complexity. Horst W.J. Rittel and Melvin M. Webber, “Dilemmas in a General Theory of Planning,” *Policy Sciences* 4, no. 2 (1973): 155–69.

<sup>4</sup> Per Morten Schiefloe extends Rittel and Webber’s 10 characteristics of wicked problems into responses to the coronavirus pandemic and highlights the strong probability that public health and economic efforts can be in direct competition. Per Morten Schiefloe, “The Corona Crisis: A Wicked Problem,” *Scandinavian Journal of Public Health* 49, no. 1 (2021): 5–8:

<https://journals.sagepub.com/doi/full/10.1177/1403494820970767>

<sup>5</sup> Garrett Hardin, “The Tragedy of the Commons,” *Science* 162, no. 3859 (1968): 1243–48:

<https://www.hendrix.edu/uploadedFiles/Admission/GarrettHardinArticle.pdf>

<sup>6</sup> Jack Nicas, “Ukraine War Threatens to Cause a Global Food Crisis,” *New York Times*, 20 March 2022: <https://www.nytimes.com/2022/03/20/world/americas/ukraine-war-global-food-crisis.html>

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<sup>7</sup> Guy Duczynski, “Investigating Traffic Congestion: Targeting Technological and Social Interdependencies through General Morphological Analysis,” *Technological Forecasting and Social Change* 126 (2018): 161–67:

<https://www.sciencedirect.com/science/article/abs/pii/S0040162517306686>

<sup>8</sup> Andrew Dowse and Sascha-Dominik (Dov) Bachmann, “Explainer: What Is ‘Hybrid Warfare’ and What Is Meant by the ‘Grey Zone’?” *The Conversation* (17 June 2019):

<https://theconversation.com/explainer-what-is-hybrid-warfare-and-what-is-meant-by-the-grey-zone-118841>

<sup>9</sup> E. Frank Harrison, *The Managerial Decision-Making Process*, 3rd ed. (Boston: Houghton Mifflin Co., 1987), 400–406. According to the author, the six courses of action that Kennedy could have taken were to do nothing, make a diplomatic approach to Castro, apply diplomatic pressures, invade Cuba, launch air strikes, and impose a blockade. Kennedy chose the sixth option. At the height of the tension, when the blockade was activated on 24 October 1962, Kennedy was determined to control events and issued orders that there was to be no shooting.

<sup>10</sup> Wesley Frank Craven and James Lee Cate, eds., *The Army Air Forces in World War II*, vol. 1 (Chicago: University of Chicago Press, 1948), 42.

<sup>11</sup> Michael Knight, *Strategic Offensive Air Operations*, Brassey’s Air Power, Aircraft, Weapons Systems, and Technology Series, vol. 8 (Lincoln, NE: Potomac Books, 1989), 1.

<sup>12</sup> Russell Rhyne offers a colourful explanation of the importance of this injunction: “A shaggy looking character comes off the hill and collars you and says, ‘My name is Rip van Winkle and I seem to have been asleep for the last 20 years. What are things like now? But keep it short; just tell me about the six parts that seem the most important.’” Russell Foote Rhyne, *The Act of Choosing: A Context-Matching Theory, and Its Practical Implications* (iUniverse, 2003): 200.

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<sup>13</sup> Fritz Zwicky, “The Morphological Approach to Discovery, Invention, Research and Construction,” in *New Methods of Thought and Procedure*, ed. Fritz Zwicky and Albert G. Wilson (Berlin: Springer, 1967): 273–97: [https://doi.org/10.1007/978-3-642-87617-2\\_14](https://doi.org/10.1007/978-3-642-87617-2_14) ; and Russell Rhyne, “Field Anomaly Relaxation: The Arts of Usage,” *Futures* 27, no. 6 (1995): 657–74.

<sup>14</sup> Software developed by the authors filters the total possible set of conditions (in the tens of thousands) to fewer than one hundred in seconds. The software also produces coloured cards indicating the worst, the current, and the desired conditions based on user inputs.

<sup>15</sup> Bernard L. Brown, "The Proportionality Principle in the Humanitarian Law of Warfare: Recent Efforts at Codification," *Cornell International Law Journal* 10, no. 1 (1976): 134–155.

<sup>16</sup> Dowse and Bachmann, “Explainer: What Is ‘Hybrid Warfare’?” “Hybrid warfare is an emerging, but ill-defined notion in conflict studies. It refers to the use of unconventional methods as part of a multi-domain warfighting approach. These methods aim to disrupt and disable an opponent’s actions without engaging in open hostilities.” *Ibid.* Although the situation in Ukraine may be characterised as “open hostilities,” a measure of restraint by all involved has prevented a rapid escalation and the active involvement (warfighting) of additional nations on Ukrainian territory.

<sup>17</sup> Andres B. Munoz Mosquera and Sascha Dov Bachmann, “Lawfare in Hybrid Wars: The 21st Century Warfare,” *Journal of International Humanitarian Legal Studies* 7, no. 1 (2016): 63-87: [https://brill.com/view/journals/ihls/7/1/article-p63\\_4.xml](https://brill.com/view/journals/ihls/7/1/article-p63_4.xml)

<sup>18</sup> Sascha-Dominik Bachmann, “Bankrupting Terrorism: The Role of US Anti-Terrorism Litigation in the Prevention of Terrorism and Other Hybrid Threats: A Legal Assessment and

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Outlook,” *Liverpool Law Review* 33, no. 2 (2012): 91–109:

<https://link.springer.com/article/10.1007/s10991-012-9115-7>

<sup>19</sup> Ibid.

<sup>20</sup> Scott Sayare, “Israeli Advocacy Group Helps Delay Departure of Gaza-Bound Flotilla,”

*New York Times*, 28 June 2011:

<https://www.nytimes.com/2011/06/29/world/middleeast/29flotilla.html>

<sup>21</sup> For a full description of how international maritime law was used to prevent the vessels from leaving the harbour, see “Shurat HaDin Sues Inmarsat for Providing Satellite Services to Gaza Flotilla,” Independent Media Review Analysis, 28 June 2011:

<https://www.imra.org.il/story.php?id=52921>

<sup>22</sup> Orde F. Kittrie, *Lawfare: Law as a Weapon of War* (New York: Oxford University Press, 2016): 317–318.