

# Effects–Based Operations between Australia and the United States: Achieving Interoperability at the Strategic Level through Shared End–States

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## Introduction

Current approaches to operations planning focus on defeating the enemy plan.<sup>1</sup> Strategic objectives are declared; planning staffs build a picture of adversary strengths, weaknesses, dispositions and intentions; commanders, with their assigned forces' own strengths, weaknesses and dispositions craft their carefully sequenced response – their counter intentions – and an attrition contest commences. The commander who employs force(s) efficiently, using neither too much nor too little, will usually succeed. Wherein lays the true origin of every RMA – the search for asymmetry in a clash of wills. The strategic effects, beyond the immediate adversary, that these actions are in pursuit of are rarely considered; indeed, planning processes do not demand these be explicitly stated before means are formulated and sequenced. Within this simplified picture any incidence of an Effects-Based Operation (EBO) could only be claimed at the tactical level, where the actions of single engagements might sufficiently bend the will of a local adversary to cease hostilities, or otherwise cause their actions to become inefficient. The cumulative effect of these many engagements does not constitute an EBO at higher levels. The point of origin for determining these higher effects begins outside of this planning–action/engagement context.

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<sup>1</sup> An example of this can be found in an early JFCOM EBO White Paper hypothesis, wherein: 'if we can anticipate with any degree of certainty how an intelligent adversary should, can, or could act and react to compensate for our actions; and if we can plan, execute, assess and adapt our actions in terms of the effects we desire, then we can identify and execute the most effective course of action in bringing about the desired change in the adversary's behaviour' (JFCOM Effects Based Operations Draft, 2001, p.1).

## Begin with the End in Mind

Military operations, regardless of type, scale or intensity, are undertaken to achieve a desired end–state; that is, they are (supposed to be) purposeful.<sup>2</sup> Checkland and Scholes offer a valuable insight into the term ‘purposeful’ wherein:

they [humans] can take purposeful action in response to their experience of the world. By purposeful action we mean deliberate, decided, willed action, whether by an individual or by a group .... [adding the caution that] it would seem to be a good idea if purposeful action deriving from intentions were also based on knowledge rather than consisting of random thrashing about – though observation suggests that there may be no shortage of that in human affairs! [emphasis in original].<sup>3</sup>

Although these authors were not concerned with national security, ‘thrashing about’ seems to be an apt characterization of many contemporary military operations. Certainly the ongoing ‘post–hostility’ military operations in Iraq are a vivid example of ends, ways and means being somewhat out of alignment and signal a possible lack of knowledge in the formulation of plans.<sup>4</sup> The strategic directions for Afghanistan are very unclear, Iran is equally troubling.

EBO has been heralded as providing this deepened understanding and knowledge, such that when plans are formulated they are mindful of the effects that actions are in pursuit of. Indeed, a true effects–based approach would demand that these effects, or “what are we trying to make happen?” be declared at the outset and be harnessed directly to a detailed comprehension of the area of interest. How else could operations be effects–based?

### THE END–STATE

Within planning doctrine, the end–state retains primacy; it is what all actions are in pursuit of. End–states have been described at both the national and military levels. Australian military doctrine defines end–state as:

the set of desired *conditions*, incorporating the elements of national power, that will achieve the national objectives [emphasis added] at the national strategic level; [and] the military strategic end–state is the set of desired *conditions* beyond which

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<sup>2</sup> Although reinforced throughout the paper, the term ‘operations’ includes warfighting and all other military activities. Many articles exploring the subject of EBO have displayed a fixation on warfighting operations and activities, often within the airpower discipline.

<sup>3</sup> P B Checkland and J Scholes, *Soft Systems Methodology in Action*, Chichester, England, 1990, p. 2.

<sup>4</sup> An interview with Jay Garner in *Jane’s Intelligence Review* (vol. 16, no. 1, January 2004, p. 30–33) details many knowledge gaps, policy failures and inter-agency rivalry that clouded not only planning efforts but also undermined the later execution of plans.

the use of military force is no longer required to achieve national objectives [emphasis added].<sup>5</sup>

United States doctrine defines the end-state as:

what the President of the United States and Secretary of Defense want the situation to be when operations conclude - both military operations as well as those where the military is in support of other instruments of national power.<sup>6</sup>

For completeness, the definition for end-state from the United Kingdom is:

that *state of affairs* which needs to be achieved at the end of the campaign to either terminate or resolve the conflict on favourable terms [emphasis added].<sup>7</sup>

Despite the subtle differences, the three definitions each convey the need for information on 'an area of interest or concern' and hint at a requirement to 'specify its characteristics' with some precision.<sup>8</sup> There is circularity to these definitions above, as the achievement of conditions constitutes the end-state and the end-state is defined by the establishment of conditions. In any event, it is clear that the desired conditions are not in place and, subject to sufficient will and fully exhausting other avenues, the military would be directed to see that these conditions are reset, whilst adhering to a range of international laws, conventions and articles.<sup>9</sup> But what are these 'conditions'? Where do they come from? How are they formulated? It is giving more substance to these 'conditions' that is of primary interest here, even to the point of asking how they can be represented, as it is effects that are to be used to reset the conditions.

In considering what is meant by 'conditions' we are drawn into a recognition that, at some earlier point, before the decision was made to take action or at least become more acutely interested in specific events the prevailing 'conditions' were not sufficiently troubling to warrant attention or action. Therefore, it is reasonable to assume that there is a threshold beyond which the 'conditions' have moved to invite action. Those 'conditions' spoken of in doctrine must become the point of origin for the 'effects' in an Effects-Based Operation. In seeking to *reset* the conditions, possibly back to pre-

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<sup>5</sup> Australian Defence Force, ADDP 3.0 Operations, Commonwealth of Australia, Canberra, 1998, p. 3–2; or Australian Defence Force, ADDP 5.0 Planning, Commonwealth of Australia, Canberra, 2002, p. 1–6.

<sup>6</sup> JFCOM website, available <<http://www.jfcom.mil/about/glossary.htm#E>>.

<sup>7</sup> United Kingdom, *Joint Doctrine Publication 01*, Operations, vol. 1, June 1994, p. 35.

<sup>8</sup> The Macquarie Concise Dictionary defines 'situation' as: "condition, the state of affairs, and combination of circumstances"; and, although not authoritative, the Microsoft Word Thesaurus offers these two words of 'condition' and 'situation' along with 'state of affairs' as alternatives to each other.

<sup>9</sup> This is Clausewitz's 'impose our will' and as demonstrated later has equal applicability across all operation types, including humanitarian and disaster relief. Ultimately we are about resetting conditions and 'the will' can be applied as effectively for starvation, disease, drug importation, natural disasters or indeed any non-adversary situation.

concern/action levels, planners would be guided by the need to impose effects that are anchored to the movement of specific conditions in specific directions.<sup>10</sup> The proposed actions have passed the test of 'purposefulness'.

This need flows through to every tactical action, as evidenced in Warden's statement that:

as a planner or commander, you ought to be able to tell what each bomb has got to do with the peace that you want to follow the war. If you can't tell how a given bomb relates to the peace that's going to follow, then you probably haven't done your homework well and you probably shouldn't drop that particular bomb.<sup>11</sup>

This ensures that the level of destruction sought and later confirmed through Battle Damage Assessment (BDA) actually delivers an outcome that is attentive to those affected by the destruction – the contributing effect. As shown later, the current fixation with effects that are tied to targeting and air power, along with a preoccupation with the use of force, is delaying a more inclusive consideration and comprehension of EBO at the national level. Coupled with this is the fact that 'it is apparent that what we want, our ends, influences our *choice* of means. Not so apparent is the fact the available means influence our *choice* of ends'.<sup>12</sup>

#### **DEFINITIONS FOR EBO**

There are many. All are useful to varying degrees and together they cage the subject reasonably well. However, the repeated references within many to 'targeting', 'adversary', 'enemy' and 'commander' give them a decidedly military flavour and a preoccupation with conflict and the use of force. Very unhelpful additions in these days of terrorism, transnational crime, peacekeeping, sanctions enforcement and many other non-warlike operations that seem to be occurring with increasing frequency.

Despite these faults, there is consensus that at some point the physical actions undertaken (whatever they might be) must transfer into a measurable, behavioural outcome (whatever that might be) – there is a *purposefulness* that can be exposed through some form of Measures of Effectiveness (MOE).<sup>13</sup> Additionally, there is the more important inference

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<sup>10</sup> Although not specifically dealt with in this paper the model presented later can drive an area of interest into failure or collapse if that is deemed appropriate.

<sup>11</sup> J Warden, *Testing the Limits*. (ed. S Clarke, Air Power Studies Centre, Canberra, 1998). These concerns relate equally to information operations wherein each leaflet, civil/military affair, deception, psychological action and all other informational endeavours must be tested against their contribution towards bringing forward the end-state

<sup>12</sup> L Rainey, V Tryon, S Friedman, & R Blaser, 'The Real Cruxes Behind Measures of Merit', *Phalanx - The Bulletin of Military Operations Research*, vol. 35, no. 4, 2002, p. 7

<sup>13</sup> MOE is another area that has eluded a satisfactory definition. It is (also) the subject of frequent misuse and confusion with 'measures of performance' and 'efficiency'. Additional complications result from the 'intangibility' of cause-effect relationships into behavior, evident within MOE examinations for Information Operations (see K Avruch, J Narel & P Siegel,

that candidate actions are *informed* by effects; the actions should not, in an effects-based approach, be selected first and then paired with a hastily concocted set of effects that deal more with the efficient employment of the means and less with the extent to which they contribute towards the achievement of the end-state.<sup>14</sup>

For any proposed definition for EBO, terms such as 'adversary' must be excluded as they foreclose an enormous range of situations that EBO can assist within. These include operations other than war and the need, where there may be an adversary, for military actions to bring forward outcomes beyond the immediate contest between two opposing forces.<sup>15</sup>

The principal failing with the application of EBO, is that planning processes do not encourage an effects-based approach, nor do they invite attention to the *prevailing conditions* or the *desired conditions* that actions are informed by.<sup>16</sup> This is very much a predicament of 'you can't get there from here'. There is something appealing about the idea that before you attempt to change something you should understand it and you should also have a clear picture of what it looks like once you have finished. Planning processes do not clearly distinguish between these or sequence the steps that guide the planner's thoughts. Doctrine is at fault.

Current approaches to operations planning (and processes such as JOPES and JMAP) focus on defeating the enemy plan.<sup>17</sup> As stated in the introduction: strategic objectives are defined; planning staffs build a picture of adversary strengths, weaknesses, dispositions and intentions – the Intelligence Preparation of the Battlefield (IPB) stage; ... Courses of Action (COA) are developed, plans are executed, one force collides with another

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*Information Operations for Peace Campaigns*, Washington, CCRP, 2000. Whilst MOE is associated with EBO, it is not dealt with beyond these brief comments. Detailed articles examining military MOE can be obtained from the author upon request.

<sup>14</sup> This fact is equally applicable in areas outside of national security, with Tomkins stating that "effectiveness may be defined as how well a program or activity is achieving its stated objectives, its defined goals or other intended *effects* [emphasis added]. He further states in the same section that "the trouble with that definition is that it ... assumes that we know what effectiveness is; otherwise, the objectives and goals could not have been set (C Tomkins, *Achieving Economy, Efficiency and Effectiveness in the Public Sector*, Kogan Page Limited, Guildford, 1987, p. 51).

<sup>15</sup> An excellent account of the failure to gain a strategic success from an operational/military success in Iraq, along with the reasons for that failure, is available in *Janes Intelligence Review*, January 2004, Vol 16, No 1.

<sup>16</sup> 'There are currently no formally established procedures in the EBO methodology and very few formally defined EBO terms' (Air Combat Command, Draft EBO White Paper, January 2002, p. iii). Similar errors are made in Australian doctrine for IO (ADDP 3.13, Information Operations, September 2002, p. 5A1-5) wherein the determination of *effects* is inside the Course of Action phase – effects must be informed by what you are trying to make happen without concerns of 'how' they could be made to happen, rather than deriving effects from those candidate COA that are being considered.

<sup>17</sup> Joint Operations Planning and Execution System and Joint Military Appreciation Process.

and an attrition contest commences that is more attentive to efficiency than effectiveness.

Clausewitz identified that:

one can go on tracing the effects that a cause produces so long as it seems worthwhile. In the same way, a means may be evaluated, not merely with respect to its immediate end: that end should be appraised as a means for the next highest one; and thus we can follow a chain of sequential objectives until we reach one that requires no justification, because its necessity is self-evident. In many cases, particularly those involving great and decisive actions, the analysis must extend to the *ultimate* objective, which is to bring about peace [emphasis in original].<sup>18</sup>

As Sakulich pointed out, additional complications arise in that:

[for example] strategic precision engagement rests on three necessary assumptions regarding uncertainties in the decision process: the ability to define discriminate effects at the strategic level of war, the ability to trace the desired discriminate effects back to a triggering action, and the ability to ensure the *actual* effects generated by that action are only the discriminate ones being sought [emphasis in original].<sup>19</sup>

If EBO practitioners are unable to progress beyond the first two assumptions in the Sakulich quote above, it is unlikely that the third will ever cause difficulties. The conventional model of operational planning and execution will, therefore, remain unchallenged and any desired strategic effects will be coincidental to actions, not because of them.

#### **A METHOD FOR EXPOSING THE END-STATE**

Whether we are concerned with issues of national security, continuing problems in Iraq, the overcrowding of public hospitals or the graffiti problem at the local school, it is likely that the area of interest is exhibiting systemic behaviours. The systemic behaviours form the interactions between factors that shift the prevailing conditions (the same conditions outlined earlier in our examination of definitions for end-state). The method is based on Ftitz Zwicky's morphological analysis, later modified by Rhyne and popularised as Field Anomaly Relaxation.

Before any attempt is made to bring about a desired change – or reset the conditions – all facets of the *prevailing* situation within an area of interest must be thoroughly comprehended and appreciated. There should be no preoccupation or inclination at this early stage with attempting to bring about any changes or even begin contemplating how these changes may be

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<sup>18</sup> C Clausewitz, *On War*, (trans. M Howard and P Paret), Princeton University Press, Princeton, NJ, 1832, pp. 158-9.

<sup>19</sup> T Sakulich, *Precision Engagement at the Strategic Level of War: Guiding Promise or Wishful Thinking?* Air War College, Air University, Maxwell Air Force Base, Alabama, 2001, p. 11.

brought about. Obviously there would be some expectation that, say, North Korea might need to undergo a change and that this change would take on a particular form and pace – this sets the motivation for the analysis. Knowing what factors could conspire within North Korea to shape every facet of the country provides valuable indicators of what an achievable end-state could look like and must form the initial first step in deriving the possible effects that could be imposed.

### Step 1

As offered by Rhyne, this step ‘is a visualisation and brief recording of initial ideas as to the structure and general content of the entire set of plausible future alternatives that a prudent planner should consider .... its essence lies in comprehending viscerally a large and diversified mass of information’.<sup>20</sup> At the start it is likely that the view will be coarse, but subsequent cycles deepen the rudimentary early understanding.

### Step 2

Whereas Step 1 provides gestalt awareness, it ‘is difficult to retain clearly within one’s own mind, difficult to explain to others and is difficult to adjust ... unless it is given some structure’.<sup>21</sup> This step builds a symbolic language that is ‘sufficiently rich and discriminatory to at least describe the patterns visualised in step 1’.<sup>22</sup> It is vital here that a strategic question can be posed that gets to the core of the issue, such as: ‘what are the factors that influence the level of unrest and violence within Iraq?’; ‘what are the factors that influence the adoption of tobacco smoking amongst juveniles?’ or ‘what are the factors that lead to overcrowding in the public health system’? This step results in a factors–conditions matrix that can accommodate all the possible configurations that the area of interest could plausibly exist in – its current configuration is but one of these.

An illustrative example examining North Korea produced the factors–conditions matrix shown at Table 1 below:

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<sup>20</sup> R Rhyne, *Projecting Whole-Body Future Patterns: The Field Anomaly Relaxation (FAR) Method*, Stanford Research Institute: 69, Washington DC, 1971, p. 26.

<sup>21</sup> *Ibid*, p. 30.

<sup>22</sup> R Rhyne, *Evaluating Alternative Indonesian Sea–Sovereignty Systems: An Exercise in Soft Technology Transfer*, Linthicum, Institute for Operations Research and the Management Sciences, 1995, p. 90.

<b>S</b>	<b>U</b>	<b>P</b>	<b>R</b>	<b>E</b>	<b>M</b>
<b>S</b> Societal Latitudes	<b>U</b> Unification	<b>P</b> Political Orientation	<b>R</b> International Relations	<b>E</b> Economic Performance	<b>M</b> Military Emphasis
S <sub>1</sub> : Open permissive	U <sub>1</sub> : Unified- democratic	P <sub>1</sub> : Democratic pluralist and open	R <sub>1</sub> : Friendly engaged open dialogue	E <sub>1</sub> : Integrated globalised and prosperous	M <sub>1</sub> : Defensive, balanced and supportive
S <sub>2</sub> : Open prescriptive	U <sub>2</sub> : Divided- cooperative	P <sub>2</sub> : Benevolent dictatorship/ monarchy	R <sub>2</sub> : Unilateralist	E <sub>2</sub> : Regionally engaged and robust	M <sub>2</sub> : All consuming fixation for modernisation
S <sub>3</sub> : Restricted	U <sub>3</sub> : Divided- adversarial	P <sub>3</sub> : Centrally controlled and closed	R <sub>3</sub> : Deceitful and dishonest	E <sub>3</sub> : Self sustaining	M <sub>3</sub> : Projected and aggressive
S <sub>4</sub> : Closed prescriptive	U <sub>4</sub> : Unified- Communist	P <sub>4</sub> : Non- benevolent dictatorship/ monarchy	R <sub>4</sub> : Hostile and adversarial	E <sub>4</sub> : Reliant on external providers	
		P <sub>5</sub> : Demigod		E <sub>5</sub> : Failure ridden and closed system	

**Table 1: Factor–Condition Array for North Korea**

As this factor–conditions array makes clear, North Korea is not North Korea solely because of Kim Jong Il, it is a complex arrangement of reinforcing factors and underlying conditions that combine to shape that nation and predispose it to a certain set of behaviours.<sup>23</sup> Similarly, these same factors and underlying conditions have a configuration that predisposes it to produce stability, security, cooperation and prosperity. The question posed to form this Factors–Conditions array was: ‘what are the principal factors that shape North Korea?’<sup>24</sup> Each of the six column headings can then be considered in terms of: ‘what is the most favourable condition that we could imagine for this factor?’ and ‘what is the most unfavourable?’ Finally, ‘what conditions could exist between these extremes?’ We are aiming here to

<sup>23</sup> Rhyne’s description of the method uses Sectors – the column headings and Factors – the rows. To align with planning doctrine and the very specific use of the term ‘conditions’ as part of the end–state I have found Factors and Conditions to be more useful.

<sup>24</sup> For reasons of psychology and mathematics the Factors should be held at seven or fewer. This is regarded as the upper limit of the mind in holding disparate ideas at the same time; and multiplying the columns together creates a bewildering number of possible configurations that must be dealt with in later steps. The six illustrated here were derived from a factors list numbering in excess of 50.

'uniquely designate a plausible, alternative condition' within a portion of our comprehension of the area of interest.<sup>25</sup>

The six factors (column headings) contain three to five conditions and result in a set of patterns, or individual configurations, that number 4800 (4x4x5x4x5x3), with the most favourable characterised by a conditions pattern set at S<sub>1</sub>U<sub>1</sub>P<sub>1</sub>R<sub>1</sub>E<sub>1</sub>M<sub>1</sub> and the most unfavourable at S<sub>4</sub>U<sub>4</sub>P<sub>5</sub>R<sub>4</sub>E<sub>5</sub>M<sub>3</sub>.<sup>26</sup>

In his article titled 'North Korea and the End of the Agreed Framework', Pollock made several key observations under the heading 'Understanding the North Korean System'.<sup>27</sup> These observations are:

- 'The North continues to adhere to a national mythology reinforced by a dynastic succession from father to son'.
- 'It is the world's sole surviving Stalinist state, with an undiminished cult of personality surrounding Kim Jong Il'.
- 'North Korea is also the world's most militarised regime'.
- 'North Korea is also a society experiencing acute internal privation'.
- 'The North's dysfunctional economic policies led to a horrific famine and humanitarian crisis in the mid-1990s'.

The validity of the table is tested using this approach in Step Three.<sup>28</sup> Rhyne offers a Rip van Winkle parable to demonstrate the value gained even at this early point in the process, suggesting we imagine that:

a shaggy looking character comes down off the mountain, collars you, and says, "I seem to have gotten out of touch. What are things like now? But please don't tell me more than maybe a half-dozen different things, and don't spend more than about five minutes on each one" [concluding that] the aspects of the local scene that one chooses in describing it to Rip would make good [Factors] in a FAR taxonomy.<sup>29</sup>

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<sup>25</sup> R Rhyne, *Evaluating Alternative Indonesian Sea-Sovereignty Systems: An Exercise in Soft Technology Transfer*, Linthicum, Institute for Operations Research and the Management Sciences, 1995, p. 96.

<sup>26</sup> The acronym guards against assigning greater importance to one or more of the factors and aids recall. Phonetic spelling is helpful, with other projects by the author using PASENGR – Public Transport; PRCTISE – Workplace Safety; and SPECIFY – Public Policy.

<sup>27</sup> J Pollock, 'The United States, North Korea, and the End of the Agreed Framework', *Naval War College Review*, vol. LVI, no. 3, 2003, p. 11-49.

<sup>28</sup> This is further explained in a Step 4 where plausible futures for North Korea are plotted.

<sup>29</sup> R Rhyne, *Evaluating Alternative Indonesian Sea-Sovereignty Systems: An Exercise in Soft Technology Transfer*, p. 95.

Any conditional changes that leaders sought to impose through a national/international Effects-based approach would need to take account of these prevailing conditions and the factors that they help to define; the very issues dealt with in the definition of end-state. Again from Rhyne, 'when the future arrives, it may differ from the present in detail, but it will resemble the existing pattern in a few major respects'.<sup>30</sup>

### Step 3

The aim of this step is to reduce the total number of configurations to a manageable set that includes only those configurations that are deemed *plausible*; 4800 discrete configurations are *possible* in this North Korea example, but many are unlikely to occur and can be 'relaxed' from further detailed analysis.<sup>31</sup> The internal consistencies are tested through a mechanical process that allows planners to rate each condition pair derived from Step 2. For any given configuration involving the six factors there are 15 different condition pairs to be considered, all of which must be able to co-exist for that configuration to survive as a whole.

The question posed was: 'For each of the condition pairs within the table, what is the likelihood that each could plausibly coexist?' Each pair was rated, within an overall understanding of North Korea, on a scale of:

- 'definitely',
- 'probably',
- 'possibly',
- 'doubtful', or
- 'no way'.

The aim is to find out whether that particular pair under examination might be found as part of some plausible situation within socio-political system within North Korea. For example, the factor-conditions array set out earlier (Table 1) is plausible at  $S_1U_1P_1R_1E_1M_1$ , equally plausible at  $S_2U_1P_1R_1E_1M_1$ , but begins to appear less likely at  $S_3U_1P_1R_1E_1M_1$ , and difficult to imagine at  $S_4U_1P_1R_1E_1M_1$ . Certainly the single pair of  $S_4P_1$  are most unlikely partners. These judgments must be completed across all six columns.

To illustrate this further, a pattern picked at random of  $S_4U_3P_1R_1E_3M_2$  would have to be scored as 'possibly' or better within all 15 pairs below to survive this filter:

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<sup>30</sup> R Rhyne, *Projecting Whole-Body Future Patterns*, p. 2.

<sup>31</sup> Hence the term *Field Anomaly Relaxation*.

$S_4U_3$   
 $S_4P_1$     $U_3P_1$   
 $S_4R_1$     $U_3R_1$     $P_1R_1$   
 $S_4E_3$     $U_3E_3$     $P_1E_3$     $R_1E_3$   
 $S_4M_2$     $U_3M_2$     $P_1M_2$     $R_1M_2$     $E_3M_2$

If, for example, the second pair of  $S_4P_1$  was judged to be so implausible that it could never appear in any whole field configuration, its removal would carry with it 1920 other configurations that contained all plausible pairs, but for that one. The results of this pairwise comparison are at Appendix 1. At what point to apply the threshold for inclusion is determined by the manageability of the results, too many and the raw material for scenarios is overwhelming, too few and only a skeletal framework can be developed. 'Possibly' has found to be a useful initial filter, with subsequent cycles through the four-step process allowing refinement.

Recall that the aim of this exercise is to deepen the planner's understanding of a particular area of interest. This specification of the full range of possible conditions has enabled a more precise and comprehensive account of an end-state. Having tagged the illogical pairs, the software can quickly determine those configurations that are *plausible*.<sup>32</sup>

#### Step 4

The final step sees the plausible factor-condition configurations (the survivors from step 3) laid out to form plausible futures. The current configuration is set down on a large flat surface or stuck to a wall, in this example it is condition pattern  $S_{3-4}U_3P_5R_3E_5M_2$  and is one of 124 that has survived the pairing at Step 3.<sup>33</sup> The best set of conditions is positioned at the upper right and the worst at the upper left. The remaining patterns form the transitions, of which there are only six:

- good getting better,
- good holding,
- good getting worse,
- bad getting better,
- bad holding, and
- bad getting worse.

<sup>32</sup> Recall the earlier example of graffiti at the local school or overcrowding at the hospital that each have systemic contributors or factors. If we focus only on one factor and bring the right effects to bear we would see a marginal improvement in that one area, but the implausibility of the now improved condition pairing with others that have not benefited from any action would halt any further improvement.

<sup>33</sup> Note also that the software allows an earlier specification of individual prevailing conditions. A complete configuration representing the combined individual prevailing conditions should emerge with all other plausible patterns.

Transitions that track towards the upper right represent good getting better, towards the upper left represent bad getting worse, the right centre indicates good holding, left centre is bad holding. Good getting worse and bad getting better would track towards the centre. The bold lines represent the conditional changes that would result from the successful imposition of our effects. These are shown below in Figure 1.<sup>34</sup>

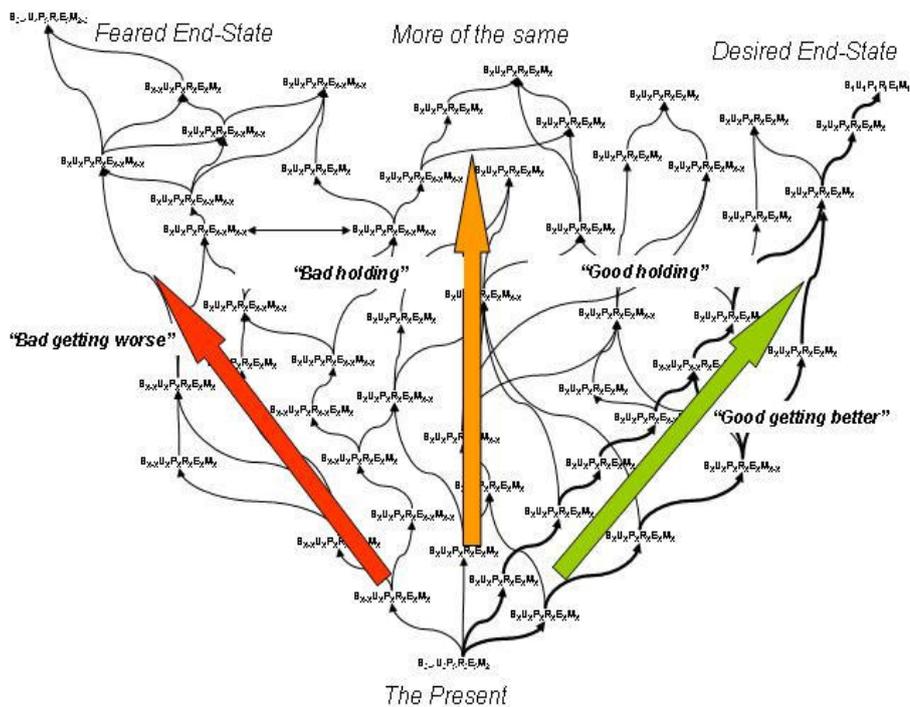


Figure 1. Futures Tree for North Korea

Finding the first few patterns beyond the present is a relatively straightforward exercise of determining which of the factors is likely to undergo an early conditional improvement. Consideration is also given to which of the other factors might need to accompany that improvement. Stepping outside of this whole-of-nation context for a moment, our personal

<sup>34</sup> Finding the first few patterns beyond the present is a relatively straightforward exercise of determining which of the factors is likely to undergo an early conditional improvement. Consideration is also given to which of the other factors might need to accompany that improvement. Stepping outside of this whole-of-nation context for a moment, our personal health and well being could also be characterised by a set of conditions that may dissatisfy us. Gaining immediate improvement may involve a change in only one lifestyle factor. Gaining more significant improvement involves being attentive to all factors.

health and well being could also be characterised by a set of conditions that may dissatisfy us. Gaining immediate improvement may involve a change in only one lifestyle factor. Gaining more significant improvement involves being attentive to all factors.

It may seem at this point that a lot of effort is being expended to develop the factors shaping the area of interest, determine the range of conditions for each, specify the prevailing conditions, declare an end-state, set out the transitions through which the system might be advanced towards that end-state (whether it chose to cooperate or not), .... What are the alternatives? Building a plan that is not founded upon a deep understanding of the area of interest, is mindful of the varying conditions and has a clear declaration of an end-state is in defiance of the principles of Effects-Based Operations?<sup>35</sup> Yes, this takes time and effort; without country experts the time is usually only a few days, the effort is limited to thinking. Hours spent staring at the CIA Factbook will not produce the same understanding of an area. This time and effort is a worthwhile investment, makes the generation of effects much easier and delivers an end-state that is expressed in the 'conditions' offered in the definitions presented earlier.

## Conclusion

A deep appreciation of EBO reveals that the consideration of means must be delayed for as long as possible; at least until the problem has been comprehended in all its detail. Significant resources have been poured into understanding the intricacies of achieving target destruction, [a fixation with the means-1st order effect relationship and thereby efficiency] but often without actually knowing what precise ... [nth order] effects are ... [desired].<sup>36</sup> As cited by Clarke (1999) in 'reviewing literally thousands of planning documents ... I found innumerable studies of how forces would be applied to destroy a given target set but no document, at any level of government, of more than a page to explain how destroying the target was supposed to activate mechanisms (popular revolt, coup, social disintegration, strategic paralysis, or even thwarting enemy military strategy)

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<sup>35</sup> As shown in the next section the *effects* are imposed on the *factors* to force the *conditional* changes. The means whereby these effects could be imposed should not be considered at this stage.

<sup>36</sup> Considerable confusion (and misuse of the term 'effects') is seen in many air power articles, whereby an effect is claimed to be 'air superiority' and progress towards the achievement of this effect is measured in terms of, for example, 'enemy sorties flown'. The ability to transit unchallenged through a particular air space is not an objective that would attract spectacular interest within the political domain. Clearly this is a 'means', it enables other more useful, higher objectives to be secured at reduced risk. Clausewitz has previously dismissed the dominance of such items as charcoal, saltpeter, copper and tin; recognizing that it is their effects (what they make happen) that possess value (Clausewitz, 1832, Rapoport trans. p. 195).

which would lead to the desired political change. Given the vast availability of classified documents, I can only conclude that they do not exist'.<sup>37</sup>

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<sup>37</sup> S Clarke, *Strategy, Air Strike and Small Nations*, Air Power Studies Center, Canberra, 1999, p. 127.

**Appendix 1 – Results of Pairwise Comparison**

At the intersection point between each the possible pairs is an indication of 'Y' – there is a likelihood that these could co-exist, or 'N' – we cannot see a situation where this could occur. As stated in the main body of the paper, the threshold for inclusion was at 'probably', with 'doubtful and 'no way' relaxed.

	S <sub>1</sub> S <sub>2</sub> S <sub>3</sub> S <sub>4</sub>				U U U U					P P P P P					R R R R				E E E E E					M <sub>1</sub> M M		
	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	3	4	5	1	2	3					
<b>Societal Latitudes</b>																										
S <sub>1</sub> : Open permissive	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N					
S <sub>2</sub> : Open prescriptive	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	N					
S <sub>3</sub> : Restricted	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
S <sub>4</sub> : Closed	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
<b>Unification</b>																										
U <sub>1</sub> : Unified–Democratic					Y	N	N	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N					
U <sub>2</sub> : Divided–Cooperative					Y	Y	Y	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y						
U <sub>3</sub> : Divided–Adversarial					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y					
U <sub>4</sub> : Unified–Communist					N	N	Y	Y	Y	N	Y	Y	Y	N	Y	N	N	N	Y	Y	Y					
<b>Political Orientation</b>																										
P <sub>1</sub> : Democratic pluralist and open									Y	Y	Y	N	Y	Y	Y	Y	N	Y	N	N						
P <sub>2</sub> : Benevolent dictatorship/ monarchy									Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y						
P <sub>3</sub> : Centrally controlled and closed									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y						
P <sub>4</sub> : Non-benevolent dictatorship/ monarchy									N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y						
P <sub>5</sub> : Demigod									N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y						
<b>International Relations</b>																										
R <sub>1</sub> : Friendly engaged open dialogue													Y	Y	Y	Y	N	Y	N	N						
R <sub>2</sub> : Unilateralist													Y	Y	Y	Y	Y	Y	N	N						
R <sub>3</sub> : Deceitful and dishonest													N	N	N	Y	Y	Y	Y	Y						
R <sub>4</sub> : Hostile and adversarial													N	Y	Y	Y	Y	Y	Y	Y						
<b>Economic Performance</b>																										
E <sub>1</sub> : Integrated globalized and prosperous																		Y	N	N						
E <sub>2</sub> : Regionally engaged and robust																		Y	Y	Y						
E <sub>3</sub> : Self sustaining																		Y	Y	Y						
E <sub>4</sub> : Reliant on external providers																		Y	N	Y						
E <sub>5</sub> : Failure ridden and closed system																		Y	Y	Y						
<b>Military Emphasis</b>																										
M <sub>1</sub> : Defensive, balanced and supportive																										
M <sub>2</sub> : All consuming fixation for modernisation																										
M <sub>3</sub> : Projected and aggressive																										

**Table 2: Results of Pairwise Comparison**