

Political / Military Gaming Stocktake

Price, JA

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Dstl

**Policy and Capability
Studies**

Porton Down

Salisbury

Wilts

SP4 0JQ

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Authorisation			
Role	Name	Signature	Date
Group Leader	Tony King	Electronic	14 March 2013
Project Manager	Ian Warnecke	Electronic	25 March 2013
Technical Reviewer	Phil Jones	Electronic	13 March 2013
Author	Antonia Price	Electronic	12 March 2013

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Executive summary

Political / Military (Pol-Mil) gaming techniques used and / or developed at Dstl fall into two broad categories: workshop-style facilitation and scenario-based gaming.

The various techniques have been analysed in order to determine their respective merits and limitations (including timescales - both the preparation and running of a game - and costs). The resulting quick reference guide (in tabular form) will help potential users of Pol-Mil gaming techniques to determine which type of technique best suits their requirement.

Pol-Mil gaming is not a panacea that can provide all the answers to complex problems, but an activity that allows a problem to be explored in the round, using different variables in order to determine alternative courses of action and decisions.

In support of contingency planning and crisis management, Pol-Mil gaming can be used to test actions and provide insights into success factors and second order effects. How, for instance, leaders respond to particular events under different pressures and scenarios.

For strategy development, Pol-Mil gaming can be applied to test hypotheses about approaches to longer-term policy problems, identifying alternative options and their potential consequences.

Arguably, though, the greatest strength of Pol-Mil gaming is the “networking” opportunity it provides, enabling national and international experts to participate in gaming activities, share their knowledge and develop shared ownership of both problems and actions required to address them.

Of the nine types of Pol-Mil gaming techniques examined, one - Methodology for Exploring Multiple Worlds (MEMW) - would be extremely difficult to reconstitute. The remaining eight gaming methods are not all used on a regular basis in Dstl, but documentation exists for guidance, plus staff who have gaming experience. This information is summarised in tabular format at Annex A.

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1 Introduction and objective

- 1.1 Political / Military (Pol-Mil) gaming methods have been identified by Security Policy & Operations (Sec Pol & Ops) as having potential utility in two areas of its planning work: contingency planning and crisis management; and strategy development.
- 1.2 In support of contingency planning and crisis management, Pol-Mil gaming can be used to test actions and provide insights into success factors and second order effects. How, for instance, leaders respond to particular events under different pressures and scenarios.
- 1.3 For strategy development, Pol-Mil gaming can be applied to test hypotheses about approaches to longer-term policy problems, identifying alternative options and their potential consequences.
- 1.4 Some Pol-Mil gaming techniques are currently employed by Dstl in support of stakeholder requirements. However, other techniques are no longer, or rarely, used.
- 1.5 The objective of this study is to identify the range of Pol-Mil gaming techniques that Dstl uses, or has used, assess the utility of the different gaming methods (including resource requirements and the lead times for setting up and running the method) and provide an assessment of the level of readiness of each method (including the feasibility of reconstituting¹ those methods that are dormant).
- 1.6 This stocktake of current and dormant gaming techniques within Dstl represents the first of two planned activities. The second planned activity is optional and will, if pursued, be a follow-on piece of work to assess Pol-Mil gaming techniques used outside of Dstl.

¹ Reconstituting the capability could necessitate several options, depending on the particular game in question. Options include re-skilling staff to be able to provide a certain type of Pol-Mil activity, or re-writing and / or rehearsing a certain type of method.

2 Approach

- 2.1** This study consisted of a literature review of available material generated by Pol-Mil gaming techniques used by Dstl.
- 2.2** Material from current and dormant techniques was collated and organised in tabular format (see Annex A).
- 2.3** The data was then analysed in more detail in the following areas:
- Aim of the technique
 - Benefits of the technique
 - Limitations of the technique
 - Dstl's level of readiness to provide the capability
 - Length of time required to deliver the technique
 - Number of people required to deliver the technique
 - Cost of conducting the technique
 - Whether or not the technique could be delivered by industry
- 2.4** Inevitably, there were gaps in the data, principally regarding costs. Where this was the case, the figures have been estimated using current manpower charging rates and / or with reference to the documented costs of similar methods. Additionally, the need to run a game more than once for a given question should be factored in when considering costs.
- 2.5** Where possible, short interviews / consultations were conducted with Dstl staff that are / have been involved with Pol-Mil gaming activities, in order to get a clearer picture of the utility and practicalities of the methods. Some of these anecdotal insights were of particular help in teasing out the pros and cons and realities of the methods - information not generally included in any of the gaming documentation.
- 2.6** The author acknowledges that, despite the thorough literature search, specific examples of games conducted by Dstl may not have been captured here.

3 Findings

Extant Pol-Mil gaming techniques used at Dstl fall into two broad categories: workshop-style facilitation and scenario-based gaming. Examples of the two different types follow below (and can be cross referred to in the table at Annex A).

Workshop-style facilitation methods

3.1 Workshops with academia and subject matter experts²

Aim: To help provide the context / situational awareness pertinent to a particular decision or question. Workshops generally cover problem structuring, validation and ideas generation. They also aid in prioritising decisions.

Format: Typical event consists of a plenary session introducing the aims of the workshop, a number of discussion sessions / groups running throughout the day/s. These sessions may include opportunities for participants to break-out into smaller groups to discuss particular aspects of the issue in question. The event is closed by drawing together all the outputs from the sessions and any issues / actions to be taken forward.

Elements of Soft Operational Analysis / Facilitation are often incorporated into a workshop, usually as a bespoke response to customer objectives. Such methods include:

- Cognitive mapping: goals – issues – options decomposition; benefits mapping; requirements capture
- Force field analysis: drivers and resistors of change
- SSM CATWOE: examination of a problem from different perspectives
- SWOT: evaluation and risk assessment
- Brainstorming: ideas generation

Benefits of the technique: Input from subject matter experts ensures exploration of the most current thinking in a particular field.

Limitations of the technique: The success of a workshop could be affected by how the participants “gel”. The role of facilitator is, therefore, crucial if discussions are to be productive. Potentially, the facilitator may have to “manage” subject matter experts - those who come from different “schools of thought” / intellectual perspectives, and even rival organisations / parts of an organisation.

Dstl’s level of readiness to provide this capability: Previous examples and documentation of workshops exist to draw upon, plus staff are available who have experience of facilitating such events.

Length of time required to deliver the technique:
Preparation time: 1-3 weeks (which may extend over 1-2 months, depending on the issue in question)

² Modelling Culture: SME workshop to develop the STSA Cultural Actors Tool (2008)

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Time to run: generally 1-2 days

Number of people required to deliver the technique:

Varies: staffing of a workshop will include some or all of the following

- Facilitator(s) - dependent on the number of syndicated exercises
- Administrative support (in addition to event management, this may include on-the-day tasks such as scribing / capturing information, managing participants and timekeeping)

Cost of conducting this technique: An estimate based on past experience is £10-20K.

Could the technique be provided by an industry partner? There is no obvious reason - other than classification / sensitivity of information - as to why industry could not be the provider.

3.2 Strategic Assessment Method (SAM)³

Aim: Used to help provide the context / situational awareness pertinent to a particular decision or question. Historically, questions addressed with SAM are significant in scale, looking at the 5-10 year future of regional areas of concern (e.g. Kashmir, Nile basin). Problem structuring, validation and ideas generation are explored using this method.

Format: A SAM event consists of several phases, each of which uses different methods and techniques. The first part consists of detailed planning of the issue to be explored followed by expert judgement capture using a wide range of security driver categories. Analysis, visualisation and modelling forms the next phase with highly structured facilitated brainstorming and environmental scanning. IT support requirements include Word, Excel, PowerPoint, plus Decision Explorer (DE) and software known as DELI which enables semi-automatic transfer of analysis results from Excel to DE. SAM concludes with evaluation of key findings.

Benefits of the technique: Input from subject matter experts ensures exploration of current thinking in a particular field. The method can be tailored to fit the amount of time available, accepting that there will be a trade-off between time and level of analysis.

Limitations of the technique: While all Pol-Mil techniques are subjective, relying on the input and judgements of individuals, SAM is possibly less subjective because the approach contains a significant evidence capture phase, rather than being solely reliant on workshop attendance.

Dstl's level of readiness to provide this capability: Previous examples and documentation of workshops exist to draw upon, but very few staff who have experience of facilitating such events.

³ Strategic Assessment Method (SAM) Validation Log Book; Report on the Southeast Asia Experiment to test the Strategic Assessment Method (1998)

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Length of time required to deliver the technique:

Preparation time: 2-4 months (depending on the issue in question)

Time to run: Varies, depending on the complexity of the issue, and can be run over several days.

Number of people required to deliver the technique:

Varies; staffing of a SAM game will include some or all of the following

- Researcher(s) - dependent on the nature and volume of material required for the workshop
- Facilitator(s) - dependent on the number of syndicated exercises
- Analyst(s) - dependent on the number of participants and quantity of the output
- Recorder(s) / Rapporteur
- Event Manager
- Project Manager
- Design Manager
- Plenary session chair

Cost of conducting this technique: Variable, dependent upon the number of staff involved in delivering the event and the length of the event. Based on past experience and other workshop events, the estimated cost is £25-50K.

Could the technique be provided by an industry partner?

The use of subject matter experts from industry could be advantageous and bring insights not available / experienced within government.

Scenario based methods

3.3 Experimental gaming - e.g. Coercion Experimental Game (2004-5)⁴

Aim: To examine the links between physical actions and cognitive effects in a coercion context, in order to understand what makes people take particular decisions in given scenarios. Adversary profiles are generated by psychologically wrapping the participants so that they take on (as far as this is possible) the character traits and idiosyncrasies of the specified adversary.

Format: The method is played using either a decision tree approach, or as a card-based decision game, and starts with a simple map and situational briefing. Additional information about the scenario is released in a highly controlled fashion during the course of the game. This enables the resulting adversarial-type behaviour to be fully monitored and interpreted, and is believed to be a key strength of the method.

During the course of the game a specific scenario - and within that, a specific course of action - is replicated a number of times (typically 4-5

⁴ Modelling Human Decision-Making and Improving Rapid Planning Using Experimental Gaming (2007)

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times) to generate sample sizes sufficient for statistical comparison. So, if four strategic courses of action are played, 16-20 individual games are played per scenario. Typically, this method generates a large amount of data, which is analysed once the game is complete.

Benefits of the technique: The individual / one-to-one nature of the game enables a thorough exploration of people's thoughts, feelings, emotions, etc. Participants are carefully selected, based on their ability to assimilate themselves into a character.

Limitations of the technique: Cost implications of using skilled participants (actors, experienced gamers). Ethical considerations (because of the nature of the material that is being tested in the game) mean that approval from MOD's Ethics Committee is required prior to conducting the game, plus consent forms need to be produced and completed by participants - all of which can add to the timeline and, therefore, cost.

Dstl's level of readiness to provide this capability: Documentation is available, plus staff who have played a key role in these types of game. Approximately 1-2 months would be required to reconstitute the capability.

Length of time required to deliver the technique:

Preparation time: 1-6 months to generate the scenario

Time to run: 2-6 weeks to game the scenario

Number of people required to deliver the technique: 1-4 people (because it takes place over a period of time, it doesn't require a high level of staffing)

Cost of conducting this technique: The figure for 2004-5 was £200K, which provided seven game scenarios over the course of the year. Based on these figures, the estimated cost is £30-40K per game. (The cost of the game is due to the necessity for scenario replication in order to understand the sources of variation and to allow statistical analysis.

Could the technique be provided by an industry partner? Initially it was run in-house but, as it has evolved, this experimental gaming technique has been run by industry.

3.4 **Table Top Scenario-based exercise / Matrix game** - e.g. National Cyber Security Centre Workshop (2010), the Canadian Matrix Games (developed by the Centre for Operational Research and Analysis)⁵

Aim: Provides a structured way of framing a complex problem and tapping into subject matter experts. Scenarios are used to explore operational or policy risks and how these may be managed / mitigated, by drawing out key issues, threats and opportunities.

Format: Participants in a Table Top Scenario-based / Matrix game are typically formed into teams, each representing some organisational entity

⁵ Matrix Game Methodology Development and Employment for Vancouver 2010 Olympics Marine Security Planning (2008)

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or set of concerns. Typical stages of a game include the following. Step 1; an introductory session to understand game mechanics. Step 2; game play, conducted as a series of “turns”. Each turn represents a discrete allotment of time - i.e. if a turn equals a week, a game consisting of four turns covers a four week time period. Step 3; hot wash - participants share the main issues and key take-aways from the game. Step 4; after-action report with recommendations.

Benefits of the technique: Flexibility of the technique - the ability to test a number of scenarios and to tailor it to desired timeframes.

Limitations of the technique: The technique is, potentially, highly subjective, relying as it does on the input and judgements of individuals.

Dstl's level of readiness to provide this capability: Previous examples and documentation of workshops exist to draw upon, plus staff who have experience of facilitating such events.

Length of time required to deliver the technique:

Preparation time: 1-2 months (depending on the issue in question)

Time to run: varies from half to a full day, to over a period of weeks

Number of people required to deliver the technique: On average, 2-3 Facilitators and 2 Scribes plus 1-3 Scenario Writers

Cost of conducting this technique: Based on 2010 figures, the estimated cost is £20-25K per game.

Could the technique be provided by an industry partner? Limitations to consider if using an industry partner are:

- The classification and sensitivities of the scenario
- Industry's ability to exploit defence community networks may be limited by their “contractor” status

3.5 **Future Worlds / Conceptual Environments method⁶**

Aim: Future Worlds and Conceptual Environments are very similar techniques, both of which can be used to help situate a decision which needs to be made and, consequently, are a useful test of policy.

Format: Typically, a Future World / Conceptual Environments event is workshop in style (see 3.1). Discussion groups will generate postures / options for the situation in question and then evaluate them against a set of given criteria. A scoring process can be used to select the key drivers for the options under consideration. Wrap up and recommendations conclude the event.

Benefits of the technique: The flexibility of the method, which provides the ability to test a number of different scenarios. It is helpful in teasing out the

⁶ UK Future Cyber Postures Workshop (2009)

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issues to consider, exposing gaps and providing insights into aspects of a situation which merit consideration. Good for medium-long term outputs / trends.

Limitations of the technique: Scenario creation has to focus on potential future challenges, not current concerns. The scenario design, therefore, takes time and resources to develop.

Dstl's level of readiness to provide this capability: Documentation is available, plus staff with experience of delivering the technique.

Length of time required to deliver the technique:

Preparation time: 2-4 months

Time to run: 1 day

Number of people required to deliver the technique: Varies; but could include some or all of the following

- 1-3 Facilitator(s)
- 4 Scribes
- 1 Process monitor
- 2 External speakers

Cost of conducting this technique: Based on comparable techniques, the estimated cost is £35-45K per game.

Could the technique be provided by an industry partner? Limitations to consider if using an industry partner are:

- The classification and sensitivities of the scenario
- Industry's ability to exploit defence community networks may be limited by their "contractor" status

3.6 Day after method⁷

Aim: Used to examine the implications of a policy; by playing a scenario through a crisis the method is used to help test policy, and to recognise and explore how policy gaps might be filled.

Format: As developed by RAND, there are three stages to a Day after game. Stage 1; participants receive a brief description of the future history which will provide the context that has led to the crisis / situation in question occurring. Stage 2; the future history is elaborated upon by an additional vignette which details a number of events that directly affect UK national interests. The participants, led by a facilitator, collectively assess the situation and populate a policy options paper outlining an advised course of action for submission to policy makers. Step 3; a return to the present to consider the lessons learned / implications identified during the exercise. The participants will then identify the key issues which require attention today.

⁷ Deterrence Communications Workshop 2012

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Benefits of the technique: It is helpful in teasing out the issues to consider, exposing gaps and providing insights into aspects of a situation which merit consideration. Good for medium-long term outputs / trends.

Limitations of the technique: The method is dependent on the quality of the scenario(s) generated.

Dstl's level of readiness to provide this capability: Documentation is readily available, plus staff with experience of delivering the technique.

Length of time required to deliver the technique:

Preparation time: 2-4 months

Time to run: 1-2 days

Number of people required to deliver the technique: Varies; but could include some or all of the following

- 1-2 Facilitator(s)
- 1 Scribe
- 2 Study Leads
- 1-3 Scenario Writers

Cost of conducting this technique: Based on comparable techniques, the estimated cost is £35-45K per game.

Could the technique be provided by an industry partner? As a technique it originated in industry, developed by RAND.

3.7 Methodology for Exploring Multiple Worlds (MEMW)

Aim: Used to help understand how people respond to situations and to think through why particular decisions are taken.

Benefits of the technique: Provides an alternative option to pathway analysis (which is brain-storm led). The methodology is appropriate for thinking through and interpreting not only why the actor chose a particular course of action, but what options they decided were inappropriate, and why. The method draws on use of Critical Discourse Analysis of documentation of key actors / groups to generate knowledge. The method could be useful in situations where the availability of subject matter experts is limited.

Limitations of the technique: The quality of the output is reliant on the experience and expertise of one person - the game controller. A sufficient pool of experienced role-players, with time to dedicate to the methodology, is required.

Dstl's level of readiness to provide this capability: Limited - dependent upon the expertise of an experienced game controller, plus experienced participants. Likely to need a minimum of 6 months to set up (it is not clear that, aside of its development, this method was ever used at Dstl).

Length of time required to deliver the technique:

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Preparation time: 6+ months

Time to run: 1 day

Number of people required to deliver the technique: not known

Cost of conducting this technique: Based on costs of other methods, the estimated minimum cost is £30-40K per game.

Could the technique be provided by an industry partner?

Given that it is not clear whether Dstl carried out a MEMW game, insights from industry could be beneficial if this technique were required.

4 Conclusions and Recommendations

- 4.1 The findings show the range of Pol-Mil gaming techniques used and / or developed at Dstl. These techniques fall into two broad categories: workshop-style facilitation and scenario-based gaming.
- 4.2 Potential users of Pol-Mil gaming techniques have, in the first instance, to determine which type of technique - workshop-style facilitation or scenario-based gaming - best suits their requirement.
- 4.3 Thereafter, it is a case of weighing up the merits and limitations of each technique (using the table at Annex A for guidance), including timescales and costs, in order to determine which approach is most practical.
- 4.4 An observation to make at this juncture is that, prior to determining whether to use Pol-Mil methods, it is crucial that the potential Pol-Mil gaming user is clear about what gaming will, and will not, achieve.
- 4.5 Pol-Mil gaming is not a panacea that can provide all the answers. Rather, it is an activity that allows a problem to be explored in the round, using different variables in order to determine alternative courses of action and decisions. It should, therefore, be viewed as one of a number of decision-making tools that the user has at his or her disposal.
- 4.6 In addition, anecdotal evidence - from colleagues interviewed for this study who have had experience of gaming - suggests that the most valuable aspect of gaming is its ability to bring together individuals of a certain calibre (experts in their field and senior decision-makers). The “networking” opportunity gaming affords for these national and international authorities to participate in the gaming event, and share their knowledge and experience is, arguably, Pol-Mil gaming’s greatest strength.
- 4.7 Of the nine types of Pol-Mil gaming techniques examined, one - Methodology for Exploring Multiple Worlds (MEMW) - would be extremely difficult to reconstitute. While the remaining eight gaming methods are not all used on a regular basis in Dstl, documentation exists for guidance, plus staff who have had experience in delivering them. Although, in the case of the Strategic Assessment Method (SAM), there are currently very few staff who have actually had experience in delivering a SAM game. Preparation time for each method varies from between one to four months.
- 4.8 In the case of all the games there are few obstacles preventing industry running them. If industry is used as a Pol-Mil game provider the key considerations to be aware of are the limitations that could arise as a result of the classification and sensitivities of the scenarios. Added to which, industry’s ability to exploit defence community networks may be impaired by their “contractor” status. That said, two of the techniques have been run by industry and the use of industry subject matter experts as participants in games could be advantageous and insightful.
- 4.9 Given the findings of this stocktake, it is recommended that the second planned activity - a follow-on piece of work to assess Pol-Mil gaming techniques used outside of Dstl - is pursued.

5 Acknowledgements

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Strategic Assessment Method (SAM) Validation Log Book (v 0.2) (2001)

UK Future Cyber Postures Workshop (2009)

ANNEX A

A quick reference tool to aid the selection of the most appropriate gaming technique for a given task:

Method	Method Type	Aim of method / when to use	No. Of people involved	Timeframe		Cost (£K)	Benefits	Limitations
				Preparation time	Time to run technique			
Workshop-style facilitation	Facilitated workshop	To help provide the context / situational awareness pertinent to a particular decision or question. Workshops generally cover problem structuring, validation and ideas generation. They also aid in prioritising decisions.	Varies: staffing of a workshop will include some or all of the following <ul style="list-style-type: none"> • Facilitator(s) - dependent on the number of syndicated exercises • Administrative support 	1-3 weeks (which may extend over 1-2 months, depending on the issue in question)	1-2 day	10-20	Input from subject matter experts ensures exploration of the most current thinking in a particular field.	The success of a workshop could be affected by how the participants "gel". The role of facilitator is, therefore, crucial if discussions are to be productive. Potentially, the facilitator may have to "manage" subject matter experts - those who come from different "schools of thought" / intellectual perspectives, and even rival organisations / parts of an organisation.
Strategic Assessment Method (SAM)	Facilitated workshop	Used to help provide the context / situational awareness pertinent to a particular decision or question. Problem structuring, validation and ideas generation are explored using this method.	Varies; staffing of a SAM game will include some or all of the following <ul style="list-style-type: none"> • Researcher(s) - dependent on the nature and volume of material required for the workshop • Facilitator(s) - dependent on the number of syndicated exercises • Analyst(s) - dependent on the number of participants and quantity of the output • Recorder(s) / Rapporteur • Event Manager • Project Manager • Design Manager • Plenary session chair 	2-4 months	SAM studies can be tailored to meet the level of time available by accepting a trade-off between time and the level of analysis.	20-50	Input from subject matter experts ensures exploration of current thinking in a particular field. The method can be tailored to fit the amount of time available, accepting that there will be a trade-off between time and level of analysis.	The technique is subjective as it relies on the input and judgements of individuals.
Table Top Scenario-based exercise	Scenario-based	Provides a structured way of framing a complex problem and tapping into subject matter experts. Scenarios are used to explore risks and how these may be managed / mitigated, by drawing out key issues, threats and opportunities.	On average, 2-3 Facilitators and 2 Scribes	1-2 months	Varies: from half day - 1 day, to several weeks	20-25	Flexibility of the technique - the ability to test a number of scenarios and to tailor it to desired timeframes.	The technique is, potentially, highly subjective, relying as it does on the input and judgements of individuals.
Future Worlds	Scenario-based	Used to help situate a decision which needs to be made and, consequently, a useful test of policy.	Varies; but could include some or all of the following <ul style="list-style-type: none"> • 1-3 Facilitator(s) • 4 Scribes • 1 Process monitor • 2 External speakers 	2-4 months	1 day	35-45	The flexibility of the method, which provides the ability to test a number of different scenarios. It is helpful in teasing out the issues to consider, exposing gaps and providing insights into aspects of a situation which merit consideration. Good for medium-long term outputs / trends.	Scenario creation has to focus on potential future challenges, not current concerns. The scenario design, therefore, takes time and resources to develop.

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Day After Method	Scenario-based	Used to examine the implications of a policy; by playing a scenario through a crisis the method is used to help test policy, and to recognise and explore how policy gaps might be filled.	Varies; but could include some or all of the following <ul style="list-style-type: none"> • 1-2 Facilitator(s) • 1 Scribe • 2 Study Leads • 1-3 Scenario Writers 	2-4 months	1-2 days	35-45	The flexibility of the method, which provides the ability to test a number of different scenarios. It is helpful in teasing out the issues to consider, exposing gaps and providing insights into aspects of a situation which merit consideration. Good for medium-long term outputs / trends.	The method is dependent on the quality of the scenario(s) generated.
Conceptual Environments	Scenario-based	Used to help situate a decision which needs to be made and, consequently, a useful test of policy.	Varies; but could include some or all of the following <ul style="list-style-type: none"> • 1-3 Facilitator(s) • 4 Scribes • 1 Process monitor • 2 External speakers 	2-4 months	1 day	35-45	The flexibility of the method, which provides the ability to test a number of different scenarios. It is helpful in teasing out the issues to consider, exposing gaps and providing insights into aspects of a situation which merit consideration. Good for medium-long term outputs / trends.	Scenario creation has to focus on potential future challenges, not current concerns. The scenario design, therefore, takes time and resources to develop.
Matrix game	Scenario-based	Provides a structured way of framing a complex problem and tapping into subject matter experts. Scenarios are used to explore risks and how these may be managed / mitigated, by drawing out key issues, threats and opportunities.	On average, 2-3 Facilitators and 2 Scribes	1-2 months	Varies: from half day - 1 day, to several weeks	20-25	Flexibility of the technique - the ability to test a number of scenarios and to tailor it to desired timeframes.	The technique is, potentially, highly subjective, relying as it does on the input and judgements of individuals.
Methodology for Exploring Multiple Worlds (MEMW)	Scenario-based	Used to help understand how people respond to situations and to think through why particular decisions are taken.		6+ months	1 day	30-40	Provides an alternative option to pathway analysis (which is brain-storm led). The methodology is appropriate for thinking through and interpreting not only why the actor chose a particular course of action, but what options they decided were inappropriate, and why. The method could be useful in situations where the availability of subject matter experts is limited.	The quality of the output is reliant on the experience and expertise of one person - the game controller. A sufficient pool of experienced role-players, with time to dedicate to the methodology, is required. The options / decisions generated could be extreme / reactionary.
Experimental Gaming	Scenario-based	To examine the links between physical actions and cognitive effects in a coercion context. Scenarios are based around a decision-tree structure and the profiles of the adversary are generated by psychologically wrapping the participants so that they take on (as far as this is possible) the character traits and idiosyncrasies of the specified adversary.	1-4 people (because it takes place over a period of time, it doesn't require a high level of staffing)	1-6months	2-6 weeks	30-40	The individual / one-to-one nature of the game enables a thorough exploration of people's thoughts, feelings, emotions, etc. Participants are carefully selected, based on their ability to assimilate themselves into a character.	Cost implications of using skilled participants (actors, experienced gamers). Ethical considerations (because of the nature of the material that is being tested in the game) mean that approval from MOD's Ethics Committee is required prior to conducting the game, plus consent forms need to be produced and completed by participants - all of which can add to the timeline and, therefore, cost.

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