A Scenario Projection for the South China Sea; Further Experience with Field Anomaly Relaxation

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The opinions expressed in this paper are solely those of the authors and have no official standing of any description.
Abstract

The paper describes the third phase of a research programme intended to validate the Field Anomaly Relaxation (FAR) approach to the generation of scenarios for socio-political problems and to suggest improvements to the approach. The research vehicle is the socio-political context of the nations of the South China Sea. It is concluded that four main scenarios for that region can be developed and that these shed light on the region's problems. Improved methods were used to generate the Field for the problem and suggestions are made for further research into the FAR approach. The conclusion from the three phases of the research is that FAR is a powerful and sophisticated approach to thinking about the unknowable future.

Keywords:

Strategic Analysis, Field Anomaly Relaxation, South China Sea, Scenario Projection.
Introduction

The difficulty of generating plausible scenarios for the future evolution of complex socio-political problems is well known and is, indeed, the fundamental research issue in futures studies. Numerous approaches have been suggested ranging from models of the econometric type in which recent data on measurable factors are fitted to equations which can then be projected into the future, to the well-written book-length essay in which measurable data and immeasurable assessments are processed by an author's judgement and insight into projections of the future. An excellent and impressive case of the latter is The World in 2020 (Macrae, 1994) though there are many more examples of this approach.

Neither of these two extremes is entirely satisfactory. The 'econometric' approach is restricted to measurable data and carries heavy assumptions of 'inertia' in the system in question. Further, there is a philosophical difficulty in that measurable data on, say, an economy include the effects of unknown economic policies which are, therefore, treated as noise disturbances in the statistical fitting of equations to data. The resultant model is, despite this assumption that policy produces only noise in the system, used to generate advice on policy options. This may be one reason why the track record of econometric forecasts has been less than impressive.

The extended essay, or learned judgement, approach has strong advantages in that nuances and subtleties can be handled and attention does not have to be restricted to numerically measurable aspects. The drawbacks are that the effort required to produce a book such as Macrae's is substantial, it is impossible to test excursions from given assumptions without repeating a huge volume of work, it is sometimes hard to find an 'audit trail' by which conclusions were reached and they depend heavily on the talent of the author. In short, much must be taken on trust.

In the 1970s Rhyne put forward a method which appears to have great attractions for producing traceable multiple scenarios. His method, Field Anomaly Relaxation (FAR) has, on the face of it, the merits of not restricting the analysis to quantifiable factors, of drawing fully on insight and judgement, of providing an 'audit trail' and of producing a range of explicable scenarios, rather than a single projection. Further, since it starts and ends with short essays, it seems to have much of the value of the learned judgement approach while avoiding many of its limitations.
Rhyne described his method in numerous unpublished working memoranda and in some refereed publications (Rhyne, 1980). The method was also used by other workers (Wood and Christakis, 1984). In the last 10 years however it seemed to have gone out of use.

The Essence of FAR

Rhyne's essential point is that to portray a problem domain, either in the present or for the future, it is essential to work in terms of a complete Field of several Sectors. He uses the powerful analogy of explaining to Rip van Winkle how the world has changed in 20 years. To do so, he argues, one would have to speak in terms of economic prosperity, technological change, social attitudes, national and international politics, and so on.

That would serve to describe the present but, to understand the future, one would have to allow each Sector to have a range of possible values and would rapidly approach many tens of thousands of possible combinations of Sectors and their values (Rhyne uses the term 'factors' for the variations within a Sector, a usage followed in this paper). Rhyne argues, convincingly, that some combinations could easily be seen to be anomalous in that they would involve inherent contradictions. For instance, it would be hard to believe in a world in which prosperity was high and widespread and which was also plagued by endemic warfare.

He goes on to suggest that, if the anomalies are eliminated, or Relaxed, the numbers of surviving whole-pattern combinations, or configurations, is reduced to a manageable number, such as 100, and that it will be tractable and illuminating to form these survivors into time-lines giving projections of logically consistent future possibilities.

A Research Programme to Evaluate FAR

The first author, attracted by the apparent merits of FAR, initiated work to explore it more deeply. A three-stage programme of research was formulated in order to evaluate the claims Rhyne had made for his approach.

The first stage was to attempt to reconstruct the methodology from the rather incomplete account given in Rhyne's papers. That work (Coyle, Crawshay and Sutton, 1994) concluded that the methodology which Rhyne had described did, indeed, work in the sense that sectors and factors could be identified in the sample problem used as the research vehicle. The authors were satisfied that anomalies could convincingly be relaxed and that timelines could be constructed, though to do so the surviving
configurations were rather arbitrarily forced to lie within 5-year time bounds. The main result from that phase of the work was to reconstruct and formally describe Rhyne's methodology.

The second phase was to apply the reconstructed methodology rigourously to a more realistic problem domain. The problem chosen was the projection of scenarios for South East Asia and the South West Pacific (Coyle and McGlone, 1995). The methodology worked well for this problem, the main result being a projection of several scenarios for the problem domain, showing areas in which ill-chosen policy might divert the region into a path leading to various forms of catastrophe from which recovery might not be easy. A related consideration was that Australia's defence policy might need to be reconsidered in the light of the range of possibilities for the future which the exercise had generated. It is, however, emphasised that such a conclusion was merely the personal view of the authors and has no official standing.

These results, that the methodology is tractable and that its product has considerable policy significance, encouraged work to proceed to the third stage: another application to a serious problem in order to verify that the previous result had not been a freak and to address some of the areas for improvement of the methodology identified in the second stage.

**Improvements Required to FAR**

The FAR process starts with the writing of a set of about 4 essays as initial visualisations of the future. From those essays, one has to construct the Sector/Factor matrix from which the anomalies are to be relaxed. This process had seemed to be too informal in the earlier work so the third phase was to include the task of somehow formalising that step.

The relaxation phase was also not fully satisfactory. A single clear incompatibility would eliminate all configurations containing it but we sought a more satisfactory way of deciding whether to eliminate configurations which contained more than one weak anomaly.

Finally, at this stage of the research programme, we hoped to find an approach to the construction of time lines which depended less on unaided judgement. In fact, the only justification for the Macrae-type essay scenario is its author's judgement and one could certainly claim the same justification for the more explicit scenarios of the FAR approach, but we thought it worth investigating the possibility of more 'automated' approaches.
The South China Sea Problem

Before recounting the work in detail, a few words about the region may be helpful.

The countries of this region have yet to establish a solid multilateral framework. The ASEAN Regional Forum was formed in 1994 as a first step, but its development as a means of promoting security consultations remains to be seen. Further, the countries in question are at different stages of economic development.

Strategically, the South China Sea is vital to many countries because of the sea lanes which pass through it. About 25% of the world's shipping traffic goes through the area. The Spratly Islands are so located that control of them would give strategic advantage and they also have value as an extension of forward defence for any regional power.

The sea bed around the Spratly Islands is expected to hold large reserves of oil and gas. Exploration efforts continue as do mutual suspicions and accusations of violation of bilateral agreements. There has already been some conflict.

Disputes about the ownership of the islands are potential flashpoints with most nations in the area asserting some kind of claim to the Islands.

In short, the situation is fluid and it is especially in such circumstances that future planning requires systematic thought about all the possibilities, which is precisely what FAR offers.

Initial Visualisations of the Future

The first stage of FAR is the writing of several essays describing the possible future evolution of the system in question, one being shown in Appendix A. The purpose of these essays is to generate ideas about the Sectors in the problem and to suggest the extent of variation in the Sectors, because that will guide the selection of suitable Factors, hence leading to the Sector/Factor matrix. As we have remarked, this stage has been assessed as being a little unstructured in previous work and on this occasion, we found the techniques of Mind Mapping (Buzan, 1993) to be helpful in distilling the required information from four differing narratives.

The mind map developed in this case is shown in Figure 1. It shows the way in which main themes emerged, as shown by the seven blocks surrounding the central words. Each block leads to radial branching of sub-ideas. We found it
Figure 1  MIND MAP OF THE SOUTH CHINA SEA SITUATION
to be unhelpful simply to translate the mind map into a Sector/Factor array, but it proved to be a most useful step in formulating the array shown in Figure 2. Note that the columns in the array are arranged to give the easily pronounced acronym ESPARC, which becomes the key word in the meta-language which FAR requires as a way of thinking about the future.

Anomaly Relaxation

The Sector/Factor matrix in Figure 2 contains 4608 possible whole-pattern configurations when one descriptor is taken from each column. However, inspection of the Sector/Factor matrix immediately reveals some anomalies. For instance, it is difficult to imagine a world in which El, Rosy economic growth, could coexist with S4, an unstable political environment. Relaxing or eliminating that anomaly eliminates 288 configurations, which demonstrates the principle that the unmanageable number of 4068 can be reduced to more tractable proportions for scenario projection.

However, not all anomalies are so clear-cut and earlier work (Coyle and McGlone, 1995) had suggested the need to evaluate the strength of the consistency of overall configurations. For instance, a field of 6 factors involves 15 pairs. If two of those were slightly dubious consistencies would the configuration still be consistent overall? To test this idea we chose to assign code numbers of 0 for 'definitely no', 1 for 'probably no', 2 for 'probably yes' and 3 for 'definitely yes'. This scoring is shown in Figure 3.

Reliably calculating the surviving configurations by hand is impossible and the version of the computer software for FAR developed by the first author available at the time only allows for definite Yes/No choices. Accordingly, those anomalies which were rated at 3 or 2 were not relaxed, leading to a total of 91 surviving configurations. When these were inspected for whole-pattern, as opposed to pairwise, consistency a further 15 were eliminated by inspection, leaving 76 from which scenarios might be produced.

In previous work (Coyle Sutton and Crawshay, 1994, and Coyle and McGlone 1995), surviving configurations had been formed into quite large groups as we have found it to be impracticable to work with all the survivors as Rhyne recommends. In the present case, the authors spent close to 2 weeks simply looking at and talking about the configurations and attaining, as Rhyne recommends, a form of personal acquaintanceship with the potential worlds they describe. This allowed us to form them into 26 clusters in which configurations seemed to have strong affinities. These clusters are shown in Annex B.
<table>
<thead>
<tr>
<th>E: Economic Dimension</th>
<th>S: Political Stability</th>
<th>P: External Power Dimension</th>
<th>A: Regional Coop / Alliance</th>
<th>R: Resource Pressure</th>
<th>C: China's Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1: Rosy growth</td>
<td>S1: Strong and stable</td>
<td>P1: Effective and influentially</td>
<td>A1: Close cooperation</td>
<td>R1: Low pressure</td>
<td>C1: Leader and policeman</td>
</tr>
<tr>
<td>E4: Negative growth</td>
<td>S4: Unstable</td>
<td>A4: Enmity</td>
<td>R4: Crisis situation</td>
<td></td>
<td>C4: Pushy, verbally</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C5: Forceful, militarily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C6: Warlike</td>
</tr>
</tbody>
</table>

Figure 2 ESPARC SECTOR/FACTOR ARRAY
The coherence ratings for overall configurations were calculated manually by multiplying the individual ratings for each of the 15 combinations in a configuration and these are also shown in Annex B.

With 6 sectors, each configuration represents 15 combinations of Sector/Factor pairs and, if all are at the maximum strength of 3, the maximum possible Coherence Rating would be 45. The coherence ratings (CR) shown in Annex 2 include only one configuration with a CR of the maximum of 45, the lowest being 35 and the average is 39.95. Of the 75 entries, 48 score 40 or more and 27 score 39 or less. The use of the CR scores is, we feel, an advance on earlier FAR work, giving us confidence that we have developed a set of viably consistent configurations.

The true significance of these scores and the most satisfactory way of using them or, indeed, whether another rating method would be better and in what sense are subjects for further research. It does, however, seem to be a promising idea for the evaluation of the consistency with which judgements have been made and, therefore, for gaining credibility for the results of FAR analyses. The FAR software is easily adapted to calculate...
CRs and, perhaps, draw the attention of the human judges to those below a certain value.

Developing Scenario Trees

To form the configurations into scenarios our method was to write summaries of the 26 groups of survivors onto sticky notepads with a designating letter, the configuration and a brief summary of the descriptions found in Annex B. An example is:

```
D+
E1S1/2P2/3A1R2C2
Asian community establishes
multilateral framework
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We then spent some days simply manoeuvring these notepads onto a whiteboard until we felt confident that the timelines were developing satisfactorily. The inevitable interruptions to this process actually helped as we were able to revisit the scenarios over time and adjust them as we felt necessary. The whiteboard was in the first author's office and the evolving scenarios attracted much comment and discussion from other colleagues, students and visitors.

Generating the tree is, on the face of it, by far the most subjective part of FAR. One is saying 'we can see that Configuration N could lead to 0 within a few years'. Rhyne has argued that the thorough familiarity which is established by working with the metalanguage and the configurations over a fairly extended period will lead one to that degree of confidence and we have certainly found that to be the case. No formal proof can be adduced for that statement, it is simply our experience. FAR is a 'soft' method and one must use a soft method to tackle a very hard problem. Indeed, that is the very basis of the extended essay method, as exemplified by Macrae.

We are also convinced that advanced graphic software is unlikely to be useful in tree generation. As Rhyne has recounted in conversations, some of his trees were generated by throwing index cards onto the floor and walking round looking at them. We have used the more advanced technology of sticky labels and a whiteboard but we, too, felt the necessity to stand back, walk round, and argue with each other. Crowding round a screen would not help that process; indeed we felt the task to be much the same as the development of Influence Diagrams in study periods (Coyle, 1995, Chapter 12).
The Faustian Tree of Scenarios

Rhyne proposes this name for the subsequent tree of scenarios, the basis being that it describes the reactions which shape the world, just as Faust felt he could do. Our tree is shown in Figure 4 and contains some novel aspects of the traditional FAR approach.

The main body of the diagram uses solid lines to show progressions of configurations through time. We also use dotted lines to show evolutions about which we were less confident. Two groups from Annex B, L and N+, do not appear as we could see no way in which they could be reached. Rhyne reports similar effects when working with ungrouped configurations. We also added the 'wild card' of configuration S being necessary to trigger movement from R to T. S represents an energy crisis which is dependent on unknown states of natural resource discovery and is therefore inherently unpredictable.

The introduction of S as a catalyst raises the question of what happens if the scenario does reach R and S does not occur. How to handle such cases is clearly a topic for further research. Apparently, the world simply stays at R. Similar considerations would apply to the doubtful moves from P to G or I and from D to its successors.

The time points on the vertical axis are deliberately not marked in as we do not wish to imply greater precision than our work justifies. The horizontal line is not an axis in the true sense, it merely gives space to separate the scenario lines. Again, further research is needed to be develop a method to rank the time lines across the page from 'best' to 'worst'. In a sense we have done that subjectively, because scenarios A and B are evidently undesirable, though it would be a bold Western analyst who told Asians that C was better or worse than D.

The main conclusion from Figure 4 is that two main outcomes are seen as possible: B in which Asia struggles along by itself and two versions of C in which Asia becomes a full, and powerful, member of the larger community, by implication of the Western community. Full attainment of D would require transitions which seem unlikely though a path to P which represents external powers 'regulating' Asian affairs is possible. Similarly, the rather unpleasant state of R seems able to exist indefinitely unless there is a resource crisis.

This range of traceable outcomes is rather different from the views put forward by analysts such as Macrae. His work paints a generally optimistic picture, broadly similar to our case C. Figure 4 shows other possibilities.
Figure 4 The Faustian Tree

Uncertain Development

Elastic time frame

Less plausible evolution

Uncertain Development

Elastic time frame

Less plausible evolution

Uncertain Development

Elastic time frame

Less plausible evolution

Figure 4 The Faustian Tree

Uncertain Development

Elastic time frame

Less plausible evolution

Figure 4 The Faustian Tree

Uncertain Development

Elastic time frame

Less plausible evolution

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Uncertain Development

Elastic time frame

Less plausible evolution

Figure 4 The Faustian Tree

Uncertain Development

Elastic time frame

Less plausible evolution

Figure 4 The Faustian Tree

Uncertain Development

Elastic time frame

Less plausible evolution
and suggests mechanisms by which they could occur. We feel that this is the true power of FAR.

**Uses of the Faustian Tree**

We tend to be rather pragmatic researchers so one asks what use Figure 4 is.

One use is a stimulant to thought. We suggest that it would be valuable to have a room set aside in a Foreign or Defence ministry with a chart such as this on the wall. Any civil servant or officer required to prepare policy options should also be required to spend some time looking at the diagram, consulting the supporting documentation and talking to the small team responsible for updating the tree before starting work on the defined task. Having such a chart in the prime minister's office should also be helpful.

Secondly, given a 'master' tree for national or regional concerns, it should be relatively straightforward to generate one for specific undertakings. For instance, a tree for the affairs of former Yugoslavia, perhaps over a shorter time frame might have informed the decision making of the UN, NATO and the nations which have committed troops to support peacekeeping.

FAR's also has value as a tool for policy analysis and some policy implications are self-evident. For instance, if, as the future unfolds, the world heads for configuration R on the path to catastrophe and if revision of the tree as time passes does not significantly change the tree, then policy makers had better try to avoid a resource crisis.

Other policy implications are more subtle and are suggested by Figure 5. The two polygons are intended to represent the sets of policies which might be appropriate in two of the scenarios from Figure 4 (to show more than two makes the diagram very complicated). The letters inside the polygons suggests that policies X and Y are appropriate for scenario B and that Y and Z are suitable for D. The overlap between the polygons implies that Y is robust against future uncertainty and might safely be adopted. The implementation of X and Z, on the other hand, might be deferred until the future becomes clearer or, if they cannot be deferred, flexibility might need to be built in so that one could switch from one to the other at need. There is, of course, the research question of whether one might deliberately adopt Z in order to help bring about D. This is a fascinating topic for further investigation by, perhaps, political scientists rather than modellers.
Figure 5 Scenariobased Policy Analysis
Summary and Conclusion

Further work is undoubtedly called for and it is hoped to report it in due course. One topic is whether a more satisfactory coherence rating method can be found and, indeed, how CRs are best used in practice. Another is that it would certainly be facile to attempt to state simple rules by which configurations can be strung together into time lines but it would be nice to have a more structured approach, though what that might be is not evident. Software support was referred to and its enhancement is in hand. It would be attractive to link it to existing software for the support of Mission-orientated Analysis of policy options (Coyle, 1989). Further, the working practices of a FAR team need to be codified. Finally, academic research is all very well, but it would enhance FAR's value if one could provide accessible cases of its application with real sponsors.

In summary, the research described here and in the two previous papers on the same topic provides, we believe, firm support for the idea that FAR is a valuable method which deserves much wider use than it has so far had in the futures community. Rhyne has always claimed, though largely in unpublished documents, that FAR was a powerful approach to the difficult problem of thinking intelligently about the unknowable future. This research effort has, we believe, vindicated his claims.
The Asian atmosphere is tense. China has flexed its muscles and laid claim to the whole of South China Sea. The Chinese South Sea Fleet is currently holding the Spratlys while endless rounds of talks are being held among the ASEAN nations, Japan, Korea, US, the UN and China. ASEAN countries stand to lose their share of resources; Japan and Korea fear of being cut off their vital SLOC.

Asia is now the world's biggest market for defence industries. The Chinese arms build-up (and especially its blue water fleet) despite the absence of any obvious threat has resulted in much distrust and suspicion in the Asian countries, leading to increased defence spending and purchase of modern equipment. A spin-off is the establishment of indigenous defence industries in almost every Asian country. Although lacking in any significant form of multilateral organisation, the countries in the region have been able to maintain peace and even become more cooperative over security issues in the face of the Chinese threat. As a result, rapid expansion in trade has continued alongside arms build-up.

The containment of power in Asia has not evolved towards a peaceful balance. Although China, India and Japan all have nuclear capabilities, the latter two are not too ready to counter China if it decides to flex its muscles. Korea has reunited as one and is busy straightening its internal loose ends. The S.E. Asian countries have been and still are weary of the Chinese intention but have so far been unable to form a solid multilateral political organisation. The countries of Indo-China are picking up in economic development but do not feature in the power equation. The US, over the past decade, has significantly and continually reduced its role of international policeman in the world arena due to domestic and economic problem and pressure. Although the US President desires an influence in Asian affairs, the US presence there is unfelt.
Annex B ESPARC Whole Scenario Configurations

Each cluster was identified by an alphabet and a paragraph that described the scenario contained within. A total of 26 clusters were formed. Figure 6.7 shows the list of clusters, with CR denoting the manually computed coherence ratings.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Configurations</th>
<th>CR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>E2S2P2A2R2C3</td>
<td>42</td>
<td>Situation in South China Sea (SCS) as in 1994.</td>
</tr>
<tr>
<td>B</td>
<td>E2S2P3A2R2C3</td>
<td>40</td>
<td>Uncertain time - situation as in A but external power withdrawn; influence limited to diplomatic exchanges.</td>
</tr>
<tr>
<td>C</td>
<td>E2S2P2A1R2C3</td>
<td>39</td>
<td>Self-help in process - ASEAN Regional Forum and other multilateral framework taken off; but still an uncertain time depending on China's next move.</td>
</tr>
<tr>
<td></td>
<td>E2S2P3A1R2C3</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>E2S2P2A1R2C2</td>
<td>40</td>
<td>Asian Community starting to take shape</td>
</tr>
<tr>
<td></td>
<td>E2S2P3A1R2C2</td>
<td>40</td>
<td>peaceful engagement</td>
</tr>
<tr>
<td></td>
<td>E2S1P2A1R2C2</td>
<td>40</td>
<td>among regional countries including China; disputes over territories in SCS remain low profile.</td>
</tr>
<tr>
<td></td>
<td>E2S1P3A1R2C2</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>E1S1P2A1R2C2</td>
<td>40</td>
<td>Asian Community establishes</td>
</tr>
<tr>
<td></td>
<td>E1S1P3A1R2C2</td>
<td>40</td>
<td>multilateral framework, focusing on economic development; working towards joint management and exploitation of resources in SCS to solve disputes.</td>
</tr>
<tr>
<td></td>
<td>E1S2P2A1R2C2</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>E2S2P2A1R1C2</td>
<td>41</td>
<td>End of disputes over resources in SCS due to successful diplomatic settlement; or</td>
</tr>
<tr>
<td></td>
<td>E2S2P3A1R1C2</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E2S1P2A1R1C2</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E2S1P3A1R1C2</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
resources in SCS found to be unworthy to fight for; enhances regional stability.

Asian Community flourishes - stable and cooperative environment, with the settlement of SCS disputes, makes possible high economic growth.

From A - China moves to integrate into the region in a peaceful manner; situation conducive for enhancing cooperation.

High economic growth probably due a stable region, and in turn contributing towards it, and due to a peaceful China opening up; but multilateralism in region remains loose.

Abundance of resources allows for peaceful settlement of territorial disputes in SCS, effort initiated by China; stability in the region enhanced as a result.

High economic growth due to a stable and dispute-free region, low resource pressure and an open China.

High economic growth induced by a peaceful and open China and perhaps a world economic uplift.

High economic growth due to abundance of resources and a
peaceful and open China and perhaps a world economic uplift.

China moves in to fill the power vacuum as external powers withdraw; does so with acceptance by regional countries.

Either China is acting in tandem with influential external power playing active role in region; or a peaceful containment policy at work.

Increased presence of external power(s) - active role in 'regulating' the SCS situation.

Cooperation among regional countries and external power(s) to bring about a stable climate in the face of an unpredictable China; disputes in SCS remains low in profile.

Stability in the region achieved in N is sufficiently good to enable high economic growth; China remains an uninvolved outsider and makes no 'unwelcome' moves.

Triangular partnership among closely cooperative regional countries, an open China and the presence of external power(s) - working towards solving the disputes in SCS and to bring about a stable region.
<table>
<thead>
<tr>
<th>O+</th>
<th>E1S2P1A1R2C2</th>
<th>38</th>
<th>Triangular partnership successful in stabilising the region and solving the disputes in SCS making possible high economic growth.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>E2S2P1A2R2C2</td>
<td>41</td>
<td>External power(s) able to 'regulate' the region and work with an open China to bring about a stable climate and enhance economic growth; no solid multilateral framework yet.</td>
</tr>
<tr>
<td>Q</td>
<td>E3S3P2A3R2C3</td>
<td>39</td>
<td>Unable to establish any multilateral framework; unstable politically in some countries; stifled economy could be both a cause and a consequent of the situation.</td>
</tr>
<tr>
<td>R</td>
<td>E3S3P2A3R3C4</td>
<td>40</td>
<td>Tension rising - lack of multilateral dialogue framework to resolve disputes; relationship strained; China pushy over SCS claims; external powers unwilling to be drawn in; poor economic prospect due to instability in region and/or world recession, making SCS a cake worth having.</td>
</tr>
<tr>
<td>S</td>
<td>E4S3P3A3R4C4</td>
<td>38</td>
<td>Energy crisis worldwide sparking very high tensions in SCS - everyone prepares to scramble for resources in SCS; slump economy and regional instability interlinked; external powers unwilling to be drawn in.</td>
</tr>
</tbody>
</table>
Conflict situation - China uses military force to take over the disputed Spratly Islands; conflict limited to skirmishes in SCS; none of the other claimants can challenge China; countries in the region are not united because some take side with China, other unwilling to be drawn in; no external help; discontent high.

War in Asian - China conducts armed action against some Asian countries; resource crisis; no multilateral framework to rescue situation; external power(s) unwilling to be drawn in; region-wide instability.
Annex C A Future Scenario

In this study, the application of FAR to the South China Sea situation produced a total of 16 alternative future scenarios. One was analysed and written into the form of an essay.

1994 – E2S2P2A2R2C3

This was a period of transition and transformation in Asia. It was the start of a new phase for the countries in the South China Sea region - one that had never been experienced and a future of many uncertainties. No longer was the region being regulated by the Superpowers; instead it was left very much to develop on its own. There was a mixed feeling about this newly gained freedom. Some saw this as an opportunity for the Asian states to unite and raise their heads to the world, others are worried of the power vacuum left behind by the USA and the former Soviet Union. The nations in the region were suspicious of the long term intention of China, being the only nation with sufficient military power to dominate the region. They knew that they had to get China on their side to sustain peace in the region. The ASEAN nations initiated the ASEAN Regional Forum (ARF) to encourage friendly dialogues among the South China Sea nations and to tie China into the economic and joint development web of interdependence.

Multilateralism in the South China Sea started to take shape but the future is still uncertain.

1997 – E2S2P3A2R2C2

The presence of external powers in the South China Sea region continued to diminish. The USA was much less committed to getting involved in any way in Asian affairs as long as there was no direct threat emerging from there. The US government was too busy trying to straighten her internal problems and reducing her large deficit. The absence of a Superpower in the region compelled the South China Sea nations to cooperate among themselves in order to be able to survive in the face of the emerging competitions from the EC, NAFTA and Africa nation groups. Many nations are still wary of China's military might but they realised that if China could become part of the South China Sea group, then the region could indeed rise to play a significant role in the world stage. Although nations continued their separate arms build-up programmes, there were indications of willingness to move towards closer cooperation in joint military training and operations. ARF continued to play a useful and successful role in forging closer ties and enhancing understanding among nations. ARF paved the way to the formation of various other inter-governmental and
ministerial meetings of different aspects - security, economic, technological transfer, joint oil exploration, etc. These efforts by most of the governments in the region made possible an environment conducive to multilateral relationships and allowed China to merge in easily. It was realised that unity was the only way for the nations in the region to prosper in the next century. China recognised that it was many years behind in industrialisation and national development. The Chinese government understood that it needed outside help to progress fast. Its distant relationship with Japan would require many more generations to make good and consequently unlikely to obtain much Japanese help in this aspect. The US was keen to exploit the economic market for her own benefit but had no intention to accelerate the modernisation of China since she might turn out to be a threat to US. Neither could China look to the West for help as she did not have a mature relationship with the West. China recognised her cooperative partners were those in the South China Sea and act appropriately to fit in. She had kept her claim of the Spratlys and Paracels to a low profile, instead she was spearheading the joint effort in oil exploration in the Spratly seabed.

2002 - E2S2P3A1R2C2
2004 - E2S1P3A1R2C2

Multilateral relationship among the South China Sea nations grew stronger. The continued neglect by the West and the US had resulted in a close knitted Asia. Asia was now a more peaceful place with the final establishment of stable governments in Cambodia, Laos and Myanmar; Vietnam became a full member of the ASEAN in 1999 and the two Koreas were in the final stage of re-union. There was also strong commitment from most of the regional governments in the establishment of a Asia Free Trade Area (AFTA) and the target date for achieving AFTA had been agreed to be 2010. There had been progress in the settlement of the overlapping claims of the Spratly and Paracel Islands. The claimant nations had reached an agreement jointly to administer and exploit the energy resources. The amicable multilateral relationship established amongst the claimants had been instrumental in arriving at a peaceful settlement. There had been an increase in various peaceful engagements among the nations, across bilateral, trilateral and multilateral aspects, leading to a strong and stable political climate in the region. This stability, together with the emergence of a huge Asian market for trade and commerce, attracted an increase in foreign investment from the West beyond the level of pre-2000.
The territorial dispute had finally come to an end. The joint administration and exploitation for oil and LNG in the seabed of South China Sea by the claimant nations had proven to be successful after much deliberation. The region continued to grow economically and started to feature more significantly in the global stage.

The Asian Community (AC) was starting to take permanent shape with the establishment of the AFTA. The AC became a significant force in the global stage, gradually catching up with the EC and the US.
Notes and References


