

# METHOD FOR MINIMIZING THE NEGATIVE CONSEQUENCES OF N<sup>TH</sup> ORDER EFFECTS IN STRATEGIC COMMUNICATION ACTIONS<sup>1</sup> AND INACTIONS

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## ABSTRACT

In this paper, the author discusses a four-step method that is used to identify, and thereby to foresee and minimize, potentially negative nth order effects associated with pending decisions. These decisions may concern actions-e.g. building a power station-or a strategic communication message related to dissuading young men from becoming terrorists-about to be released by video or social media to influence or inform or influence a particular audience. This paper describes the steps and the methods employed in some detail.

## INTRODUCTION

In a campaign speech in 1952, Eisenhower told his potential constituents, ‘Everything we say, everything we do, and everything we fail to say or do will have its impact in other lands’.<sup>2</sup> As practitioners of ‘Strategic Communication Actions’ (SCAs) we ought to consider Eisenhower’s words. Will the impacts of our communication be those we intend? Will the consequences be better or worse? Entirely different? Will there be unintended or unanticipated consequences-nth order effects-either positive or negative?

Nth order effects, or unanticipated consequences, are much more important than most people realise. French Economic Journalist Frederic Bastiat, said, ‘In the economic sphere an act, a habit, an institution, a law produces not only one effect, but a series of effects. Of these effects, the first alone is immediate; it appears simultaneously with its cause; *it is seen*. The other effects emerge only subsequently;

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1 Since there is significant disagreement about definitions of Strategic Communication, Influence Operations, Information Operations, and Public Diplomacy, as well as uncertainty about which agency is supposed to be doing what, I will use the phrase Strategic Communication Action (SCA) as a catch-all term.

2 From Dwight D. Eisenhower’s campaign speech in San Francisco in October, 1952, as reported in: Kenneth Osgood, *Total Cold War: Eisenhower's Secret Propaganda Battle at Home and Abroad*, (University of Kansas Press, 2006), p. 47.

*they are not seen*; we are fortunate if we *foresee* them...There is only one difference between a bad economist and a good one: the bad economist confines himself to the *visible* effect; the good economist takes into account both the effect that can be seen and those effects that must be *foreseen*.<sup>3</sup> The same applies to practitioners of SCAs.

In 2002, on Highway 56 in South Korea, a heavy U.S. armoured engineering vehicle struck and killed two schoolgirls who were walking to a party. The particular type of vehicle being driven that day is so large as to require both a driver and a commander acting as a lookout for successful navigation. The assumption of responsibility and blame are critical in the Korean culture, and apologies are required immediately. For the Americans, however, it seemed proper to withhold judgment until they could reliably determine the cause. The Commanding General said, 'We'll show the Koreans how our justice system works'. It took almost six months before there was a court martial. The soldiers involved were acquitted because the problem was determined to be a faulty communication system in the vehicle. No blame was ever assigned, and no apologies were given until much later. The Koreans were incensed and began a series of anti-American protests, which exacerbated anti-American sentiment. The cascade of consequences was far-reaching, beginning with the election of an anti-American President and ending with the withdrawal of the 3rd Brigade, 2d Infantry Division from Korea.<sup>4</sup>

Sadly, some of the most devastating unanticipated consequences have come from actions intended to be well-meaning assistance from governments and humanitarian organizations. The experiences of such well-respected organizations as the World Bank, Akademie für Krisenmanagement, Notfallplanung und Zivilschutz, and the Special Operations Forces, provide countless anecdotes about unanticipated consequences. The monograph *The Nightmare Years to Come?* argues persuasively for increased efforts to understand the 'human terrain' of foreign territories. 'Negative consequences to U.S. national security may have been an unintended byproduct of U.S. decision-making in the Middle East for decades. There is little a policymaker can do if consequences are unforeseeable. But often that is not the case. Unintended is not necessarily unexpected, nor a total surprise.'<sup>5</sup>

While the military is becoming increasingly cognizant of the need for cultural awareness, there have been few, if any, systematic attempts to anticipate or minimize the effects of military actions and communications strategies past the second or third order. Most decision makers and communicators have a good idea of the primary outcomes

3 Frédéric Bastiat, *Selected Essays on Political Economy*, 1849, Seymour Cain trans. (New York, 1995) online in the Library of Economics and Liberty: <http://www.econlib.org/library/Bastiat/basEss1.html>

4 David S. Maxwell, 'Beyond the Nuclear Crisis: A Strategy for the Korean Peninsula', (National War College of the National Defense University, April 2004) pp. 75-77.

5 *Ibid.*, p. 32.

they wish to achieve, and most work effectively to achieve first order goals. They consult with experts on the ground who understand the current situation, believing that they have thought through potential negative impacts and understand the human dynamics of the situation. However, the negative effects they manage to address seem to be second order at best, and understanding the underlying beliefs and motivations of a population requires further preparation. This paper introduces an approach for bringing greater depth and breadth to the task of understanding populations and their motivations, and suggests a model that can be used to analyse possible courses of action in terms of outcomes or effects.

Every physical action we take, every word we utter starts as an idea. Ideas are shaped in people's minds by nature, nurture, education, understanding, values, beliefs, motivations, and more. Communication involves both the formulation and presentation of an idea, as well as its reception. Both communicator and receiver are influenced by the nature and nurture filters we all have. So how does a communicator, whether military or diplomatic, ensure that the ideas they give out in the form of SCAs match and achieve their intentions?

Relying on the 'six honest serving men', as Kipling called them, 'What and Why and When and How and Where and Who' is not enough.<sup>6</sup> Not even when we add a seventh most useful question-Who Else? Before we can answer even these basic questions, we need to define the system, or system of systems, we are wanting to influence. Which part of the complex, interrelated world do we want to change? Most real-life systems are nonlinear. Nonlinear systems have a propensity to be sensitive to initial conditions. This means that even a tiny tactical error can have enormous strategic consequences. Most people are now familiar with the concept of the 'butterfly effect', but, while we might be tempted to use chaos and complexity theories to assist us in developing successful communication strategies, they are probably not the answer as they do not consider the human element specifically.<sup>7</sup>

The four-step approach described in this paper has been developed and refined over a period of forty years. The springboard for this trajectory was the author's work at a Plessey think tank in the UK in the late 1960s, providing input to the Lord Justice Roskill Commission on the Third London Airport. The goal of the project was to assess the impact of building the airport on the local area and vice versa. A series of cascading weighted matrices was developed-an example of such matrices is shown later in Step 3. A group of experts, taking a very broad systems perspective, collaborated to comprehend

6 Rudyard Kipling, 'The Elephant's Child', *The Definitive Edition of Rudyard Kipling's Verse*, (Hodder & Stoughton, London, 1973), p. 605.

7 Edward N. Lorenz, 'Atmospheric predictability as revealed by naturally occurring analogues' (<http://journals.ametsoc.org/doi/abs/10.1175/1520-0469%281969%2926%3C636%3AAPARBN%3E2.0.CO%3B2>), *Journal of the Atmospheric Sciences* 26 (1969), 636-646.

the salient features of both the airport and the environment into which it would go, so that productive variables could be identified. Their study went into great detail, even examining the impact of aircraft noise on crop growth, since this region was a producer of agricultural products. The system of weighted matrices developed for this project is still crucial to the analytical model presented here, although today calculations rely on more powerful technological solutions, such as Agent-Based Modelling and Simulation (ABMS).

Originally, the work of defining the system and identifying the necessary variables, the **first step**, was conducted through brainstorming sessions. Master Mind groups, established formally by Andrew Carnegie, are well known for producing excellent results that have enabled people such as Carnegie, Ford, Edison, Bell, as well as many contemporary entrepreneurs, to succeed.<sup>8</sup> The most effective way to develop compelling messages or actions is by having experts from various disciplines, serving a variety of functions, work together. Any endeavour involving people will necessarily involve a good measure of subjective judgment, but steps can be taken to produce a definition of any given system, which is broad enough to include all significant variables, yet specific enough to work with effectively.

Whenever we must assess the impact of an action or communication, we must seek to be aware of the ways in which the affected population is likely to perceive that action or communication, which may differ significantly from the intended result. The **second step** of the method is to understand the stakeholders, all of them, and how the SCA looks from their perspective. As stated above, human perception stems from abstract, subjective, and learned elements. During the 1970s, in order to develop some guidelines for understanding the various aspects of human identity and perception, the author was involved in developing a number of values-based models, including the former Stanford Research Institute's Values & Lifestyles (VALs) Program, and Taylor Nelson Monitor's Social Value Groups. This early work has also proven to be valuable for characterising and understanding the values and motivations of the various stakeholders involved in any SCA.

The **third step** is to understand the relationships between all elements of the system. This includes all of physical elements of the system and the way they interact with each other; the people and/or groups involved and the way they interact, as well as the ways in which the people interact with the system. The elements of the matrices are identified during brainstorming sessions and supplemented by asking the experts to collaborate on the creation of Mind-maps to produce a schematic drawing that visually illustrates the relationships between the variables. In this step the variables are coded into the analytical

8 .....  
Napoleon Hill, *The Law of Success*, (Original 1925 Edition), Orne, Mass, 2010, pp. 397-8.

model and each relationship is given a numerical value for the strength of the interaction between each pair of elements. The resulting information can be used as feedback to calibrate and fine-tune the variables of the interactive matrices, as well as to generate forecasts and scenarios.

The **fourth step** of the method is to develop mini ‘*What If?*’ scenarios to run through the ABMS program, in order to discover in what ways specified elements of the defined system might react to changes in inputs. Early on, similar scenarios were developed for technology assessment, a precursor to the assessment of nth order effects.<sup>9</sup> Clearly no one can eliminate all unanticipated consequences, or they would no longer be unanticipated, but we can do our best to increase our awareness of them and minimize them.

The models and scenarios we use are based on whatever trends/events/variables we identify and believe to be important, however, experience has shown that the scenarios that actually come about are often those we did not foresee. But even in such circumstances, the act of thinking through the scenarios requires decision-makers and communicators to reassess what they know and derive lessons for the next attempt. In thinking about the future there can never be any real rigor because there is no data about the future. We can extrapolate data from the past and speculate about what trends will look like in the future, but this is still speculation. The author has been a forecaster/futurist for more than forty years, and has an extensive understanding of the futures field. ‘*What If?*’ scenarios can never be anything other than speculative. They can be enhanced by the use of various kinds of modelling to increase their accuracy, but they are not infallible. The more we understand, the more we can apply that understanding to successfully minimizing the negative impacts of important strategic decisions.

To recap, the four steps to identifying and understanding nth order effects are:

1. Define the system, or system of systems, and the context in which it is to be considered
2. Understand your target audience, know values and motivations of those involved from leaders to general population
3. Examine the relationships between the people/groups involved, as well as the relationships between them and the system
4. Develop mini ‘*What If?*’ scenarios to discover in what ways the elements of the defined system might respond to changes in inputs

Let us take each step in turn.

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 9 Christine Ralph (MacNulty) ‘Scenario Development for Technology Assessment’ in Marvin Cetron (ed), *The Methodology of Technology Assessment*, (Gordon & Breach, New York, 1972)

## STEP 1. DEFINE THE SYSTEM AND ITS CONSTITUENT ELEMENTS

The first order of business is to define the scope of the relevant system, or system or systems. Any system will be part of a larger system and contain myriad smaller systems. The task here is to define the system in question for productive use in the predictive model.

Looking at the *global economy*, for instance, is too large and general a system to be useful for analysis. It can be broken down into more useful elements such as energy market shifts; government policies with respect to trade, climate, currency; demographics, including both aging populations in some regions and growing youth bulges in others; urbanization, including congestion, demands on the labour force...and so on. A brainstorming session with relevant experts can help to determine the key elements of the system. Then, depending on what you are trying to do, you may want to break those categories down into even smaller components. In addition to brainstorming in this way, mind maps can be very useful for identifying the hierarchies (main branches, smaller branches, twigs) within the elements.<sup>10</sup>

To visualize the systems or systems of systems involved, place the subject under discussion in the middle of your mind map (e.g. *Destroying the ISIS brand*) and then start to build up the main branches around it. These branches are the elements of the system you are examining. They may be structural elements, facts, or questions related to the topic. Another approach is to develop a comprehensive systems diagram. System diagrams (sometimes called block diagrams) are powerful tools that help people understand how complex systems work, and show, for instance, how a change in one factor may impact elsewhere. For some people mind-maps encourage more out-of-the-box and creative thinking. Use the method that works best for you and your team.

**Example:** *Destroying the ISIS brand*

The branches (and sub-branches) may include such topics as:

- The ISIS organization (organizational structure, leadership, capabilities...)
  - ISIS Resources (funds, weapons, allies, skilled people, financial managers...)
  - ISIS people (values, beliefs, motivations, education...)
  - State of the Nation in which they are operating (government – friendly/unfriendly, state of wealth, population – supportive/not, terrain conditions, availability of food, water, shelter...)

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 10 Mind-mapping was developed by Tony Buzan more than 30 years ago as a way to encourage the nonlinear development of ideas. The first book that included the subject was: T. Buzan, *Use Both Sides of Your Brain*, (Plume/Penguin, NY, 1991)



## STEP 2. UNDERSTAND YOUR TARGET AUDIENCE: THROUGH VALUES

One of the most effective ways of understanding people is by understanding their values. Values underpin every aspect of society, including its culture, politics, economy, industry, attitudes, consumption, and even the development of technology.<sup>11</sup> Thus, values provide the basis for understanding the context within which people live and operate in a society.

Values are emotional constructs that form the foundation for our motivations, attitudes, and behaviors. Values are long term structures that change slowly. Because they operate at a deep emotional level, messages that appeal to values are far more influential than messages that address attitudes or behavior. If we want to communicate-to influence people-then messages that appeal to values resonate with people at a much deeper level and have longer-lasting effects than messages that appeal to attitudes or behavior.

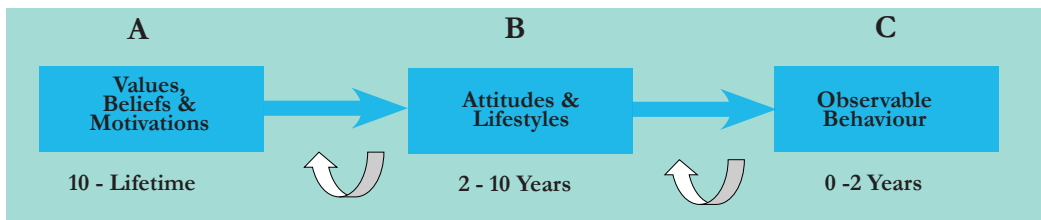


Figure 2: Progression from Values to Behavior

Values models have been used very successfully for multinational organizations, government institutions, and even for forecasting political changes in various countries for more than 35 years. They can be used at a macro-level to identify the values of a whole country or region, or at a micro-level for small groups. They are derived from surveys that can be done online (where internet is available) by phone, or in-person. The latter approach, conducted by local agents, is better for people who are unused to modern technology, who don't have access to it, or who are suspicious of foreigners or strangers.

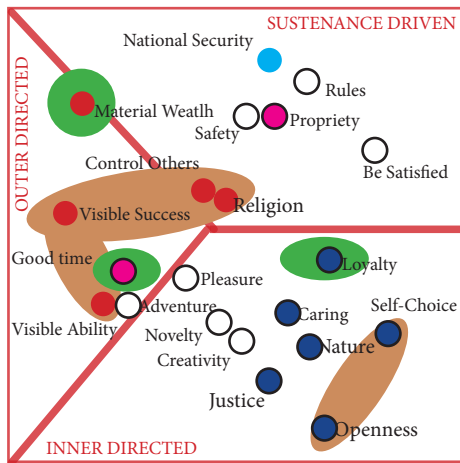
The values model the author uses is based on Maslow's hierarchy of needs<sup>12</sup>,

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11 There are numerous approaches to understanding behaviours. The Behavioural Dynamics Institute (UK) has developed successful and measurable behaviour change campaigns based on its own models that empirically measure forty-five different parameters.

12 Maslow, Abraham, *Motivation and Personality*, (Harper Row, NY 1954, 1987), pp. 15-45.

and augmented by the work of Shalom Schwartz<sup>13</sup>, Geert Hofstede<sup>14</sup>, Ron Inglehart<sup>15</sup>, and others. For global comparisons we rely heavily on the work of Shalom Schwartz, as his ‘portrait values’ have been tested and validated by academics in 74 countries. In every country, the author and her colleagues have identified three broad groups of values- Inner Directed, Outer Directed and Sustenance Driven-related to Maslow’s hierarchy. Within each of these broad groupings there are up to four subgroups. This broad values template can be used for strategic purposes, and the subgroups for more detailed targeting purposes.<sup>16</sup> In Figure 3, we show the areas of the map related to the three broad sets of values, and the Schwartz portrait values are mapped into that space.

The objective of the values analysis is to sort the population into target subgroups based on their values, beliefs and motivations. Since values underpin motivations, the author focuses on the core set of values that might compel or influence a group holding a particular set of values. A population can be segmented according to the different values particular subgroups hold. Using values for this purpose provides a greater depth of analysis than psychographics. There are many different ways of visualizing values data-e.g. heat maps, contour maps, segment maps. Below is an example of the segment map, a simple and easy to use method of data visualisation.



**Motivation to become a foreign fighter:**  
 Powerfully motivated by the need for the esteem of others, manifest here in strong drive for visible success/ability and desire to control others. Religion plays a significant part for this persona. other motivators are the need to belong and fear of “the other“

**Main inhibitors to becoming a foreign fighter:**  
 Desire for wealth combined with a desire to have a good time. Disregard for loyalty to anyone or organization

Figure 3: Example of a segment ‘map’ using the 21 Schwartz portrait values

13 Schwartz, Shalom; Melech, Gila; Lehmann, Arielle; Burgess, Steven; Harris, Mari; Owens, Vicki, ‘Extending the cross-cultural validity of the theory of basic human values with a different method of measurement’, Journal of Cross-Cultural Psychology Vol 32 (5) (September, 2001)

14 Hofstede, Geert, Cultures and Organizations, (McGraw-Hill International, UK, 1991)

15 Ronald Inglehart, Modernization and Postmodernization, (Princeton University Press, Princeton, NJ, 1997)

16 Cultural Dynamics Strategy & Marketing (see <http://www.cultdyn.co.uk/>) is responsible for this particular values model and related surveys.

This is the Schwartz values map of one group in a typology of six groups of males aged 18-29 in a particular culture.<sup>17</sup> This map shows a group of young males who are predisposed to becoming foreign fighters. The constellations of ‘hot button’ values indicated by the red dots (those on which this group is statistically significantly above average) and ‘cold buttons’ (below average), are analyzed to develop a picture or narrative of the characteristics of the group. These hot button values can be used as the basis for crafting messages to the group, identifying characteristics of new products or services to sell to the group, and so on, while the cold buttons are subjects to be avoided.

Each value can also be considered in turn by asking (ourselves and experts on the culture/region) whether a particular value is likely to push this individual into certain behaviors (orange), or inhibit him (green). In this case, the questions relate to an individual’s propensity toward becoming a foreign fighter.

One other benefit of these models is that they can be used to analyze and forecast behavior. As indicated earlier, values are of long-term duration, attitudes are medium term, and behaviour is short term. If all that is available is behavioural data, then the only forecasting method available is some form of extrapolation of that behaviour. But behaviour is fickle, and can be altered by external events of many kinds. In order to forecast behaviour, whether that of a large population or a small group, the most reliable way is to understand the underlying values and motivations, how those are changing, and then anticipate how those changes are likely to play out in behavior. Extrapolating values-especially using a values hierarchy such as that of Abraham Maslow-is relatively easy. Interpreting behaviour is also made easier by this approach. In a recent paper by Cdr (rtd) Steve Tatham PhD, RN, he discusses a situation in Iraq where the US believed that so many Americans were being killed by IEDs was because the Iraqis hated them.<sup>18</sup> It was later discovered that, although most of the bomb-layers were ideologically opposed to the US, the majority of the bomb-makers were doing it solely for the money, and many wanted the money in order to pay their way to the US.

In February 2010, the author gave a presentation on cultures at the State Department. A question was asked about a particular IED maker, who said he loved Americans, and was making bombs in order to be able to join his family in the US. The audience wanted to know what values would allow a person to earn money for escaping to the US by killing Americans. They were given the map in Figure 3 on the previous page,

17 Christine MacNulty ‘The Value of Values for IO, SC & Intel’, IO Journal, (3rd Quarter 2010), 29-34.

18 Cdr (rtd) Steve Tatham PhD, The Solution to Russian Propaganda is not EU or NATO Propaganda but Advanced Social Science to Understand and Mitigate its Effect in Targeted Population, National Defence Academy of Latvia, Centre for Security and Strategic Research

showing a pattern of values that explain the behaviour very well: the bomb-layer wanted material wealth to get to the US, he wanted visible success, and for people to know his ability, so they would hire him again, and he had little loyalty or sense of caring to anyone except his family. In this particular case, however, religion was unimportant, so that marker would have been uncoloured.

### **STEP 3. UNDERSTAND ALL THE PEOPLE INVOLVED: THROUGH CULTURAL-COGNITIVE DIMENSIONS**

There is an additional tool that can be used, especially for communication-that of Cultural-Cognitive Dimensions.<sup>19</sup> This tool examines where individuals or groups fall on the spectrum for each of a number of cultural-cognitive dimensions listed below. We, in the West, tend to be at opposite ends of the spectrum from many of our target audiences. This makes it difficult for us to frame our messages in terms that make sense to them, and to judge how they are going to perceive our messages. Knowing not only their positions on the dimensions, but also our own, can give us the cultural awareness needed to craft messages successfully.

Altogether 17 dimensions have been identified, and there may be more, depending on the cultures/people we are addressing, but the critical dimensions for crafting most SCAs are the six described here:

- *Epistemology-authoritarian vs. empirical:* If a target culture/individual lies at the authoritarian end of the spectrum, which many of our adversaries do, then invoking authority is likely to produce a better effect than an appeal to science and/or logic and vice versa. In the West, we tend to be at the empirical end of the epistemological spectrum, and therefore have difficulty understanding how someone can live and operate relying solely on an authoritarian voice.
- *Way of thinking-linear vs. holistic/contextual:* If a target culture/individual lies at the linear end of the spectrum, then logical, step by step approach is the best option. If the target lies closer to the holistic/contextual end, then we need to develop narratives and tell stories to put the message of the SCA into context. In the West we tend to be at the linear end of the spectrum.
- *Temporal orientation-past vs. future-oriented:* Do we need to invoke the heroes and glories of the past or the possibilities and potential of the future?
- *Sensitivity to shame-low vs. high:* Should we try to cause shame by ridiculing their actions, or should we offer solutions that help them maintain their honour? This is a difficult metric that needs to be addressed with care on a case by case basis.
- *Approach to power-centralized vs. decentralized:* Should we approach the leader alone

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 19 Christine MacNulty, 'Perceptions, Values and Motivations in Cyberspace', IO Journal (3rd Quarter 2009), 32-38.

and negotiate only with him? Or should we send out broad appeals to the population and expect them to influence the leadership?

- *Group orientation-collective vs. individual:* Should our messages discuss the benefits to the group, or to those of individuals?

## STEP 4. EXAMINE THE RELATIONSHIPS

In the third step we take the elements we have identified as important and productive features of the system we have defined, and plug them into an analytical model. The method described here employs weighted matrices that can be used together in cascade, where the weights from one matrix feed into another. These techniques are derived from decision impact analysis, cross-support analysis, and *What if* mini-scenarios (see Step 4) that are then applied to sub-sets of weighted matrices.<sup>20</sup> Decision impact analysis is a matrix technique that was designed to estimate the size of the impact on an organization or system of changes in decisions. It is similar to cross-support analysis, a technique that was designed to analyse the effects of making and implementing complex decisions that affect and are affected by a large number of variables, while also identifying causal and dependent relationships. Although at the time it was developed, computing power was limited, so modelling and simulation was not an option, there were benefits to be had by working through the impacts in person, and that approach is still used—at least, in part. However, Agent-Based Modelling and Simulation (ABMS), together with vastly improved computing power is now able to provide the capability to test relationships and play with *What ifs* to generate much improved probabilities and ranges of options.

*ABMS is a method of actively modeling a system in such a way that the simulations are adaptable, repeatable, and deterministic. “Agents” are built in software to represent all actors within a system. These actors can include people, groups, organizations, machines, vehicles, resources, and virtually any other component of the system. Some agents will have decision making capabilities, while others will simply react or remain inert to be used by other agents. The complexity of the agents’ ability to “think” is determined entirely by the designers of the simulation.*

*Agent-based simulation refers to a model in which the dynamic processes of agent interaction are simulated repeatedly over time, as in systems dynamics, time-stepped, discrete-event, and other types of simulation. An agent-based model, more generally, is a model in which agents repeatedly interact.*

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20 Christine A. Ralph (MacNulty) ‘The Beginnings of Cross-Support Analysis as Applied to the Fishing Industry’ in Cetron and Ralph (eds.), *Industrial Applications of Technological Forecasting*, (John Wiley & Sons, NY, 1971), pp. 274-289.

*Agent-based modeling is equally suited to biological-based systems, machine-based systems, and, of course, hybrid systems containing both. Proven applications include modeling current social behavior, animal behavior, industrial processing, marketing, and many others.<sup>21</sup>*

For the real world application of the ISIS example, we might start with a statement of the total system-the branches of the mind-map related to ISIS itself would provide us with that. Let us call those elements of the system  $S_n$ . Then we would identify as many of the main relevant variables that could affect or be affected by ISIS-in other words, the main causal and dependent variables. Let us call those variables  $V_n$ . We would then prepare the appropriate matrices, such as that in Figure 4, and the expert team would brainstorm the degree of the relationships between the variables.

	S1	S2	S3	S4	S5	S6	S7			S
V1	L	H	H	-H	L	L				
V2	-M		H	-M	L					
V3	M	M	M	-M	L					
V4		M	M	L	M					
			L	M		M				
				H	M					
Vn										

Figure 4: Matrix of causal/dependent variable ( $V_n$ ) against system elements ( $S_n$ )

We would take each row variable in turn (as causal) and ask how much does this variable affect each column system element rated on a scale of High (H), Medium (M), Low (L) and Zero (Blank)-positively and negatively, as appropriate. An example of the questions that would be asked of the team of experts might be: If variable V1 were to increase, what would be the impact on system element S1? The same question would be asked for each system element. Then the process is repeated asking what if V1 decreased?

Thus V1 has a High positive impact on S2 and S3, but a -H on S4. We assign weights to the scores: H=8, M=4, L=2, Zero=1 (both positive and negative) so that later we can assess the priorities by adding the scores for the rows and/or columns, depending on what we are want to do with the scores. We can multiply variables

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 21 Tom Codella, CEO, Evince Analytics, Herndon, VA, from an email to the author, 4 May 2015.

in subsequent matrices, such as Figure 5, by the weights, if it is appropriate for the analysis. Frequently discussions within the group are needed to get at the real issues that emerge from asking what the impacts are. Sometimes the answers can be quite complex, and if there appear to be several possibilities, then we may need to re-work the issues into more detailed sub-issues to make sure we are not cancelling out effects by using a variable that is too general and does not address the specific situation required. The approach is time-consuming, but it means that the people involved (experts, analysts and decision-makers) work through each of the variables rather than just guessing.

For strategic communication, the variables would include the values of our target audience segments, key elements of the messages we wanted to send, the media we might want to use, and the frequency of delivery. Then, because we would be evaluating the degree of impact of these elements on the ISIS system/organization (such as recruiting, sponsorship, availability of weapons, etc.), we would already include the basis for metrics in our assessment.

	V1	V2	V3	V4	V5	V6					Vn	
V1		H M	M	M	L	L	H	H				$\Sigma_1 V1$
V2	M		H	H	L	M	L					$\Sigma_1 V2$
V3		M		L								
V4	H	M										
V5												
Vn	$\Sigma_2 V1$	$\Sigma_2 V2$										

Causal variables - rows: V1 has high impact (H) on V2, for instance.  $\Sigma_1$  = sum of weights...  
 Dependent variables - columns: V1 has medium dependence (M) on V2  $\Sigma_2$  = sum of weights...

Figure 5: This matrix examines the relationships between the causal/dependent relationships

We also use more complex matrices such as the one in Figure 5 above which contains both causal and dependent relationships-using the same scales-in order to evaluate more complicated and further order relationships.

Using ABMS we could re-evaluate impacts in terms of weight, probability, and priority quickly and easily in order to form the basis of the *'What if?'* scenarios described below.

## **STEP 5. DEVELOP MINI 'WHAT IF?' SCENARIOS**

Once we have the matrices completed, we try to be as detailed as possible in identifying the *'What ifs?'*. One good approach is to ask questions such as: What would happen if Causal variable V1 increased significantly over the next 12 months? What would be its impacts on V2 to Vn? Or, what would happen if Causal variables V3, V4, V9, V10 all increased at the same time? The possibilities are endless, and with ABMS we are able to try large numbers of options, and be quite comprehensive about the decisions or actions that will be most effective, and have the fewest negative effects. Our social values model are used to enrich these *'What if?'* questions, because we can use them to understand the motivations of the players. By understanding people's values and their behaviour, we can anticipate what they are likely to do next-and why. And we can use those speculations to inform our scenarios. For instance, in many Middle Eastern countries, there are large numbers of well-educated, unemployed young men. Many of them have a pattern of values similar to those shown in Figure 3. These young men want material things, they want excitement, they want to be seen to be competent and successful, and they are not loyal to anyone except their family. We could develop scenarios about what ISIS might be able to offer them that would fulfil their needs. We might think about what we could offer them instead-and it won't be working in factories, even though that might satisfy their material needs. Visible success, ability and excitement are too important to them. We can also speculate on what things and messages will appeal to them and why; what things and messages will have no effect, or will turn them off. Working forward from this information we build scenarios of the short- medium- and longer-term developments that we anticipate, seeking to identify opportunities, advantages, problems, and threats. Although predicting the future is a speculative exercise, the four-step method can provide a rigorous analysis of any situation, both qualitative and quantitative, based on the way in which the judgments from the experts are used, and it can offer significant insights into potential nth order consequences.

## **CONCLUSION**

Those of us engaged in any form of Strategic Communication Actions need to do our best to ensure that we achieve the effects we intend, and do not suffer from those we do not intend. In other words, we need to choose carefully what we say and do. SCAs are not, and should not be, the preserve of the military and not solely about

political warfare. However, well-executed SCAs can help us to avoid unnecessary violence and the escalation of confrontations resulting from unintended negative effects. The *SOF Support to Political Warfare White Paper* states:<sup>22</sup>

*“A thoroughly whole-of-government endeavor; Political Warfare is by no means the preserve of SOF. Given its diplomatic and economic content and its focus on achieving political ends, Political Warfare is likely best led by agencies beyond the DoD.<sup>23</sup> Indeed, Political Warfare can only succeed if it is conducted in a way to “elevate civilian power alongside military power as equal pillars of U.S. foreign policy.”<sup>24</sup>*

The term Political Warfare is an emotionally loaded term, which is why I have suggested Strategic Communication Actions. Further, the more experts from all branches of government, NGOs, and industry that can be included in SCAs, the greater the opportunity for SCAs to result in positive intended consequences instead of unintended and/or negative consequences. One of the key areas we need to develop is our understanding of other cultures—not only from a behavioural perspective, but rather from the perspective of understanding the deep cultural values, motivations, and mores. Master Mind groups, brainstorming sessions, and roundtable discussions that work through the four steps presented here incorporating many different perspectives and disciplines offer a much greater chance of success. This method may be in conflict with the views of those who want to classify such operations, but much can be done that is unclassified. Finally, we need our ‘political masters’ to recognize that one of the problems that leads to unintended consequences is the short-term view of the metrics used to plan SCAs. We cannot expect a SCA to be effective in days or even weeks. We are dealing with people who may not even see/hear our communication when we make it. If they don’t dismiss it immediately, they may have to discuss it with family, friends, tribal or government elders, and really think about it. And what are our metrics—delivering the message to a large group of people in the hope that it will stick? Or targeting one key individual, who then has to get his own timing right for the delivery of *his* message? Putting the ‘strategic’ in SCA takes time and a clear understanding of what is feasible within a given time frame. Effective communication with other cultures cannot be achieved with a short-term fix.

22 SOF Support to Political Warfare, White Paper Final, (United States Army Special Operations Command, March 2015), p. 14.

23 See this discussion in the State Department context nearly a decade ago: Dave Kilcullen, ‘New Paradigms for 21st Century Conflict’, in the State Department eJournal, (June 2007), Online <http://smallwars-journal.com/blog/newparadigms-for-21st-century-conflict>.

24 Department of State & USAID, *Leading Through Civilian Power: The First Quadrennial Diplomacy and Development Review*, (Washington DC, 2010), Executive Summary 2, Online <http://www.state.gov/documents/organization/153635.pdf>

## CASE STUDY: TANZANIA

Many people find it difficult to understand how negative nth order effects can come about without them being obvious to the people involved. Therefore, I will retell a well-documented true story about unanticipated negative effects of a well-intentioned government operation in Tanzania exposed by Hubert Sauper in his documentary film *Darwin's Nightmare*.<sup>25</sup>

In the 1990s, the European Union (EU) and other donors, supported the government of Tanzania in developing a fish processing industry at Mwanza at the southern end of Lake Victoria. The first order effects-Europeans get plenty of good fish and Tanzanians get jobs and money-appeared to be a marriage made in heaven. But the second to fifth order effects-highlighted in the documentary film *Darwin's Nightmare* suggested nothing but disease, death, and destruction. Here is a brief description of the events.

Throughout the '60s, '70s, and into the '80s, the European fishing industry declined precipitously. Overfishing in the North Sea, the Northern Atlantic, and the Mediterranean had reduced the quantities of fish available, just at a time when consumers were starting to become more health conscious and wanted more fish. At the same time, the technology of fast freezing and chilling fish at sea opened new opportunities for processing and transporting fish from around the world to satisfy European demand.

### Helping Tanzania

Tanzania lies at the Southern end of Lake Victoria, a poor but relatively calm country surrounded by the more politically troubled countries of Burundi and the Democratic Republic of the Congo to the west, and Zambia, Malawi, and Mozambique to the south. Mwanza, a city close to the Lake, is the third largest city in Tanzania with reasonable road infrastructure and a small, fairly primitive airfield/airport.

Sometime in the '60s, a voracious fish-the Nile Perch-was introduced into the lake. No one knows exactly when or by whom, or whether it was done by accident or design. The fish ate everything in the lake and bred rapidly. When the fish is filleted, it looks like, and has the texture and flavour of Sea Bass-a fish highly prized by European consumers.

So the European Union helped to establish fish processing plants on Lake Victoria, close to Mwanza. The European Union officials (including especially the Italian representative) held an official press conference, at which they spoke about the economic benefits of the plant to the Tanzanians and the benefits of the fish for the Europeans. They believed they were doing a good thing providing monetary and development assistance

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25 Darwin's Nightmare, a documentary movie produced by Hubert Sauper, released in 2004.

for Tanzania. They were taken on a tour of the plant, and in the documentary, we see the high-tech interior of the plant.

However, one important feature of the plant that was missing, which would have prevented it from being allowed to operate in Europe. It had no means for disposing of the fish heads, offal, and carcasses. In the movie, we see the unwanted remains being dropped out of a chute into trucks or on the ground. Whatever fell on the ground was shovelled up and put back in the trucks. The bio-refuse was taken to a place nearby and dumped on the ground. We see it rotting and covered in maggots; we see kids playing with it and local women and older children picking it up, putting it out on drying racks so that it could later be fried and sold to the local population. Did the Europeans notice? Could they have predicted the effects this one missing element could have caused?

The rotting fish and the stench/smoke from all the smoking and frying turned the place into a real health hazard, creating respiratory problems and blindness in the local population. It became clear that, aside from the fish processing plant itself, there were no clean and sanitary places around-no water except for the lake, no sanitation, and no housing of any kind.

Meanwhile, word of this new industry spread and young men came seeking work, leaving behind wives and families. Prostitution grew into another significant industry, with young women servicing both the workers at the plant and the pilots of the air transporters. This resulted in an increased number of men and prostitutes with HIV/AIDS. When the men returned home, they took the HIV/AIDS with them. Along with the prostitution came drugs, and these drugs were increasingly available to children. In other words, the whole area-from the ecosystem in the lake to the lives of the majority of people living in the area-took a downward turn.

## **Transportation and Weapons**

At this time, the neighbouring countries of Rwanda, Burundi, and the D.R. of Congo were experiencing uprisings and tribal conflict, for which they needed weapons. We do not know whether the EU officials were aware that the Ilyushin Il-76 was a better airplane for transporting weapons than fish, or whether they turned a blind eye to it, since it offered a relatively cheap form of transportation. When asked what was in the airplanes on the return journeys to Mwanza, the Russian pilots said 'nothing', although it became clear to Hubert Sauper, the producer and director of the documentary who photographed them, that they were smuggling in large collections of weapons.

When we analysed the situation, we could see that there were five levels of effects. The first order effects were good, then they got progressively worse, as seen in the Figure 6.

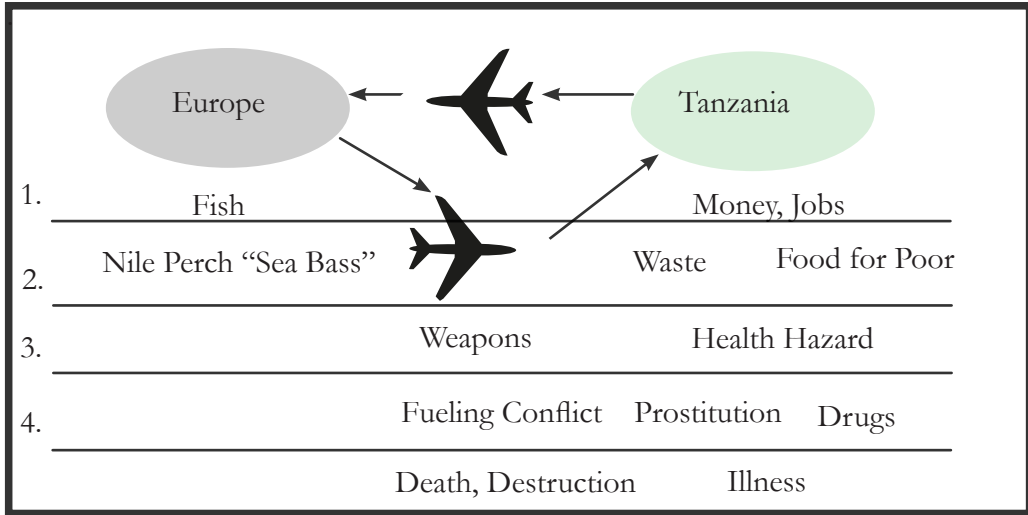


Figure 6: Table of Nth order effects

The Europeans believed that they were doing some good in Tanzania by providing the fish processing plant that brought money and jobs to the area. And they were benefitting European consumers at the same time. Until this movie was made, they had no idea of the disaster they had caused in the area, and many still do not believe they had a hand in it. They had no understanding of the strategic context, even for establishing a fish processing plant. They had even less understanding of the local socio-political environment that underpinned that part of the world. The only two groups that really benefitted were the European consumers and the weapons smugglers.

Obviously, in hindsight, we are able to do a much better job of assessing the nth order effects of that developed from the situation near Lake Victoria. By applying the basic principles of the four-step method, the situation would have been better understood and different decisions concerning the fish processing plant could have been taken. If the EU had conducted even a simple cross-support analysis, decision-makers could have evaluated the importance of the issues and to focus on appropriate solutions, such as having proper disposal system for the fish offal that could have included turning it into edible food for the local or using European aircraft to transport the fish to Europe, returning with products that would benefit the locals, rather than providing weapons to be used in neighbouring conflicts.

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**ABOUT THE AUTHOR**

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