Practitioner

Confronting Complexity

Andrew Tait[1] & Kurt A. Richardson[2]
[1]Idea Sciences, US
[2]ISCE Research, US

While complexity researchers have made considerable advances in recent years, complexity thinking, as a formal discipline, has yet to enter the mainstream. We believe that this is partially a consequence of the packaging. The relative dearth of research into practical tools, when compared with that conducted in the areas of philosophy and theory, serves to compound the problem. Given the difficulties experienced by those attempting to transfer complexity ideas from the laboratory to the field, maybe we can best approach the development of tools from alternative theoretical directions—and use our understanding of complexity to evaluate and enhance them. In this article, we introduce Confrontation Management—a theory of human interaction that has its roots in Game Theory—and show that this theory supports the modeling and analysis of, and planning within, complex social systems. As such, we suggest that it represents a powerful addition to any complexity practitioner's toolbox.

Introduction

Alice Munro, the Canadian writer, once said, "The complexity of things—the things within things—just seems to be endless. I mean nothing is easy, nothing is simple." The more time we spend studying complexity, the more we share her sentiments.

Of course, the very pervasiveness of this complexity is the reason we gravitate towards it—like basin-dwelling moths to the attractor flame. This journal, along with others, stands as a testament to the progress that is being made in this young discipline.

Our passion, however, lies in the possibility of releasing all these ideas into the wider ecosystem. While many of the more beguiling concepts have embedded themselves in everyday language, complexity thinking, as a formal discipline, is clearly *much* less widespread.

There are islands of success, but the intellectual tectonic shifts required to make them continents have not been forthcoming.

Why is this? We believe that it's partially down to the packaging. Complexity thinking is hard. Much of the research draws on sophisticated philosophy. This hinders the broad adoption of the ideas in the professional mainstream. The fact that the amount of research in the area of tools is dwarfed by that in the areas or philosophy and theory serves to compound the problem[1].

There is no doubt that the packaging of complexity into a neat, user-friendly package is a tall order. It's difficult enough to just describe the damn thing! Maybe this is because we've been gradually expanding the complexity of complexity. As we've experienced the failures of the systems engineering paradigm (Midgley & Richardson, 2007), and seen the limitations of "new reductionism" (Richardson, 2002), our definition of complexity has become increasingly elaborate. Naturally, this has trickled down the pipeline to challenge the tool developers.

But, maybe we can best approach the development of tools from another theoretical direction—and use our understanding of complexity to evaluate and enhance them. Richardson (2008) has discussed the notion of a "modeling culture" where a practitioner uses linear tools in a nonlinear manner. This results in a kind of "cyborg" tool where man is responsible for providing the complex context. However, as complexity researchers surely we'd like to provide man with more assistance in this area.

In this article, we introduce a theory of human interaction that has its roots in game theory. This theory supports a formal modeling framework, and a computerized planning

---

1. A rough analysis of the papers published in this journal in 2007 shows that less than 10% of them were primarily concerned with the development of tools for practitioners.

system. It has been applied in the fields of politics, business and government to address real world problems.

We intend to show that this theory, known as Confrontation Management, supports the modeling and analysis of, and planning within, complex social systems. As such, it represents a powerful addition to any complexity practitioner's toolbox.

This article continues with a working definition of complexity thinking, followed by a description of Confrontation Management. Confrontation Management is then considered in the light of our definition of complexity thinking, illustrating its value as a tool for complexity practitioners. We close with a case study showing how Confrontation Management has been used as an effective planning tool within complex social systems.

Complexity thinking

We embark on this section with some trepidation. Attempting to define the key elements of complexity thinking in a complexity journal is never going to go well. We could take the easy way out. You know…you've seen it before—"As avid readers of this journal we assume you are all familiar with complexity thinking." In many circumstances, this would be a valid defense. However, we are arguing that a tool meets certain requirements, so we need to be explicit about those requirements. We need to present some coherent and comprehensive description of complexity thinking. If not, we would just be picking and choosing some ideas from the field.

This lack of discipline can be seen in much of the complexity literature. It generally manifests itself as one of the basic tenets of complexity thinking being shown to be relevant to a particular situation, leading to that situation being described as "complex" (in the formal sense). This won't do. We need to be more rigorous.

This leaves us needing to produce our definition. There are probably as many definitions of complexity as there are complexity researchers. Hey, that means ours is as valid as anyone else's! So screw it—suddenly we feel emboldened. In all seriousness, we can do no more than make an honest attempt at a coherent and comprehensive enumeration of the key elements of complexity thinking—and hope that you can accept it as such. And we'll be mercifully brief…

Boundary critique

The process of boundary critique (Midgely, 2005) is arguably *the* key feature of complexity thinking. We view this as the central element, with the remaining elements we will define being corollaries of the commitment to it.

Life is defined by where we draw the lines. The fact that defining these boundaries is so difficult is part of what makes life interesting. All boundaries are no more than temporary patterns resulting from a filtering process (e.g., based on personal values). As such, they are to some degree arbitrary (at the same time both quasi-objective and inter-subjective) and require ongoing review to understand how they shape our context of interest—and how our context of interest shapes them. Richardson (2005) has demonstrated this at length (with cellular automata).

Although boundaries are difficult to define, define them we must. In this spirit, Ulrich (1995) argued that a boundary is rationally justified if it is agreed by all the stakeholders—the involved and the affected—with the agreement being expressed through language. While we may not agree on the meaning of words, we can at least reach an understanding of how others are using them—e.g., one man's "terrorist" is another man's "freedom fighter".

Pluralism

Given the non-reality of all boundaries (…very Buddhist…), we cannot rely completely on any one perspective. All perspectives are ideals and the real world is not idealistic. Mono-paradigmatic approaches are risky as they only tell part of the story.

Perspective is being used here in the broadest possible sense. It refers to individual opinions as well as particular methodologies. In a sense, these perspectives can be equated with stakeholders as they all have a vested interest in being recognized as relevant and important

in the war of ideas—a kind of evolutionary memetics.

Being aware of multiple perspectives equips you for more effective boundary critique, of course. This is one of the processes that helps provide crowds with their wisdom (Surowiecki, 2005).

Synthesis

Synthesis is closely related to pluralism. It relates to the attempt, through the use of boundary critique and pluralism, to tailor descriptions (models) to the context of interest, rather than have the model shape the context. Or, to put it another way, have the dog wag the model tail, rather than vice versa.

Of course, it is never this simple. By definition, the context of interest must pay some lip service to the model. If not, the model would have to be as complex as the reality it seeks to explain. It is quite reasonable to take a particular context and evolve it so that it can be more easily understood through a model. The key is that the "evolution" is reflected in the real world and is not just something that happens in the mind of the analyst. So, through boundary critique, an incoherent plurality is beaten and brutalized into a context specific and provisionally synthetic whole.

This synthetic whole can still only be a bastardization of the real world. It can only, therefore, be a tool for thought, rather than a proxy for reality. We need to maintain some ontological distance from our constructions. The commitment to "boundary critique" and "pluralism"—and maybe "improvement", as in Critical Systems Thinking (Flood & Romm, 1997)—is more important than the final model itself.

Emergence

The starting point of an analysis should not completely predetermine the end point of the analysis. This should lead us to be wary of purely systematic approaches. We need the flexibility and confidence to wander through "analysis space" (evolving as a consequence of our boundary critiques) in a way that acknowledges the emerging view of the real world, rather than the favored method / methodology. In addition, we need to recognize that the real world will collectively conspire to respond to our design interventions in a variety of ways—some of them not considered by the "designers".

This requires us to engage in a tricky balancing act. Being overly prescriptive leads to narrow-minded analysis, while "anything goes" analysis can lead nowhere. Emergence requires some kind of container to filter out the cacophonous noise of reality. The structure of that container, however, should not remain fixed or overly restrictive.

Timeliness

Although the allocation of boundaries (in both space *and* time) is essential to "doing stuff", control/design in complex systems is a never ending process. Most models used in support of decisions will, at best, only have short-term applicability. To guide any complex system in a particular direction requires ongoing analysis and intervention. And, of course, with the analyst being part of the complex system he seeks to affect, the notion of a "particular direction" will itself evolve. No room for long-term dogmatism here!

Confrontation Management

Confrontation Management, also known as Drama Theory (Howard, 1998), is a general theory of human interaction. While having its genesis in game theory, it was developed in reaction to two weaknesses of that theory when applied to real world interactions involving people:

1. Game theory assumes that people pursue their objectives within a fixed frame or structure;
2. Game theory assumes that people always act rationally in pursuit of their goals.

In Confrontation Management, parties' are modeled as interacting in an attempt to attain objectives that they cannot bring about unilaterally. Tensions caused by the incompatibilities between their objectives (which can be shown to be of six types) result in creative attempts to change the context of the interaction.

The possibility that parties will act against their assumed preferences—i.e., act irrationally—as they jostle is very much part of the analysis.

Some may be anxious about the idea of *Confrontation* Management being a generally theory of interaction. It does seem rather bleak. While we're sure that the readers of this journal will be aware of the problems of staking too much on the definition of a single word, we would, nevertheless, like to address this concern.

Confrontations sit on a continuum between conflict and collaboration. It is only in the rare case of *total* unqualified agreement that we have parties that are not in some form of confrontation. A confrontation exists whenever parties have incompatibilities in their objectives. Even when their objectives are perfectly aligned, the *potential* for those objectives to diverge creates a shadow confrontation.

People generally interact with others to change their intentions in some way. If we agree as to the goals of a project, we may disagree over the timescales. If we agree on the timescales, we may disagree over the correct approach. If we agree over the correct approach, we may disagree over the staffing. Interaction is driven by the desire to change intentions—however benign that desire may be.

We intend to give a fairly rough and ready definition of Confrontation Management. Readers interested in a more detailed treatment may wish to pursue it through the references.

Evolving confrontations

Parties to a confrontation (who may be individuals, sovereign states, or something in between) interact in the course of pursuing their projects. Their projects are generally driven by their values, which, in turn, emerge from their historical backgrounds.

Figure 1 describes the phases through which an interaction evolves (Howard, 1998). First, there is a "scene-setting" phase in which parties discuss the issue. During this phase they develop a common understanding of the situation. While not necessarily laying their cards on the table, they at least agree which deck they will be using—e.g., the options open to them. "Scene-setting" will also involve the identification of other parties to the interaction. These will generally be identified for the purposes of strengthening an existing party's case.
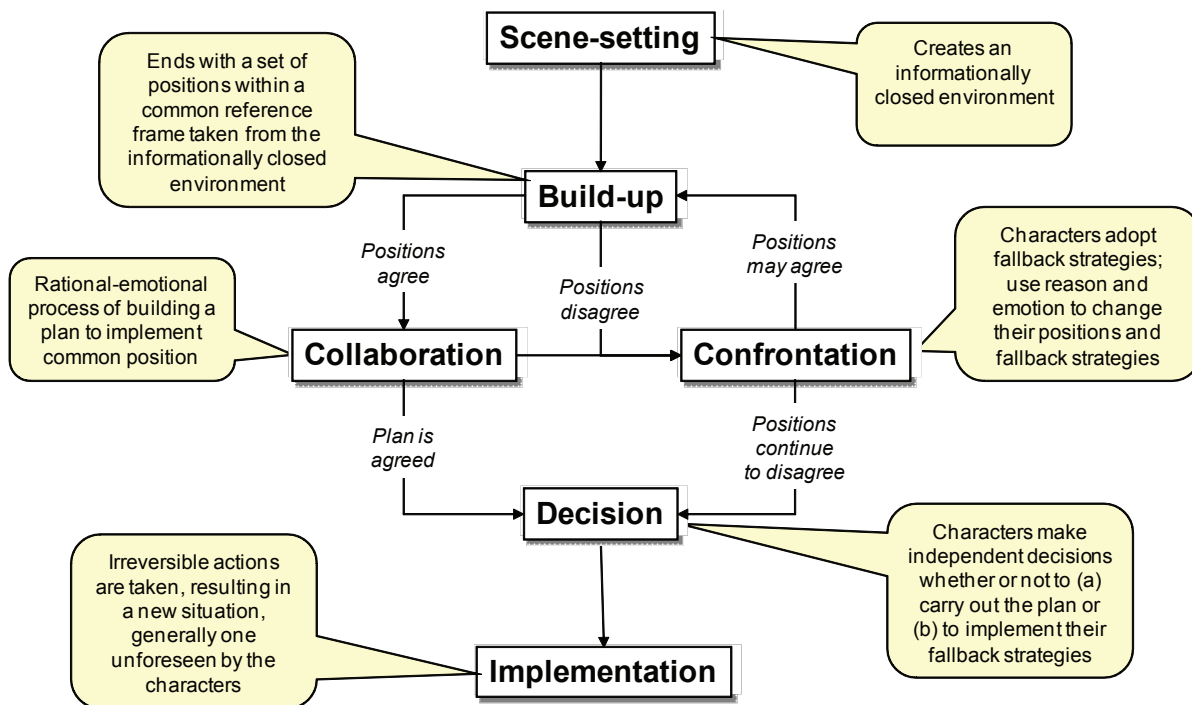

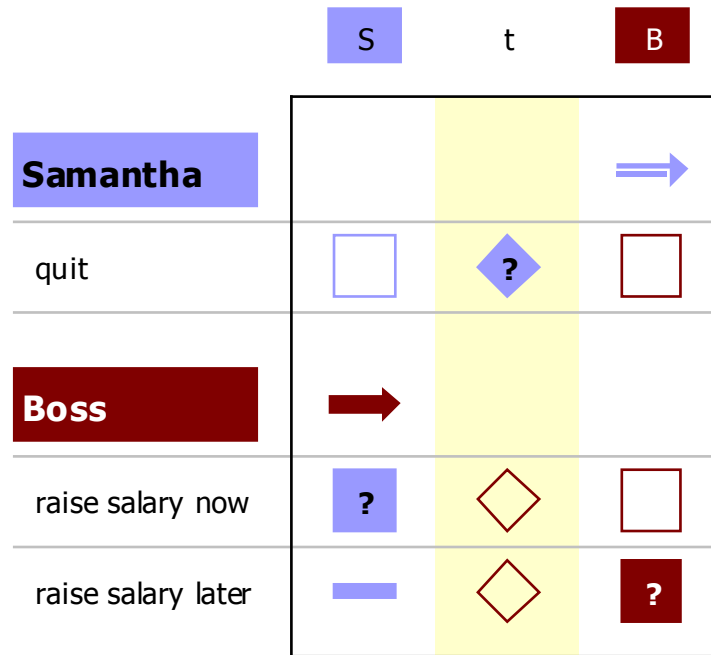**Figure 1** *Phases in the evolution of a confrontation*

Figure 2 *Options Board describing a confrontation*

The "scene-setting" phase ends when the parties have agreed on the structure of the interaction—i.e., no new information is being brought into the discussion. This is crucial as no progress can be made while parties are being constantly bombarded with new data.

In the "build-up" phase, parties start to lay out their objectives, or positions. A party's position takes the form of actions (whether or not to implement their options) they wish other parties to take, along with actions they themselves agree to take if the other parties adopt the position. At the same time, a party will also outline its stated intentions. These are the actions it is indicating it will take if its position is not adopted by the other parties. A party's stated intentions often take the form of threats designed to pressure the other parties into adopting its position.

An important point to note, especially for the purposes of this article, is that a party's position is largely defined by the other parties. The behavior of others is defined by what they believe you will do—not what you are claiming you will do. Hence, for the purposes of changing the intentions of others, your perceived position is more real than your actual position.

After positions and stated intentions are defined and communicated, parties then express any doubts they have about the stated intentions and positions of others. They also express their preferences for the positions of others over the combined stated intentions—i.e., the threatened future.

Figure 2 shows a confrontation between an employee (Samantha) and her boss. The device used to represent this confrontation is an Options Board—the primary modeling tool using in Confrontation Management.

In this confrontation, Samantha is upset that she hasn't received a pay raise in a while and is threatening to quit her job over the issue. Her position (shown as the first column) is that if her boss raises her salary (denoted by the solid square) she will not quit (hollow square). The boss' position (final column), on the other hand, is that if she doesn't quit (upper hollow square), he'll agree to raise her salary at a future date (solid square).

The threatened future (middle column), resulting from the stated intentions of the parties, is that Samantha will quit (solid square).

Question marks ("?") in the columns represented doubts about a parties intentions. So, in the middle column, Samantha's boss doubts that she will carry out her threat to quit. The arrows across from the parties' names
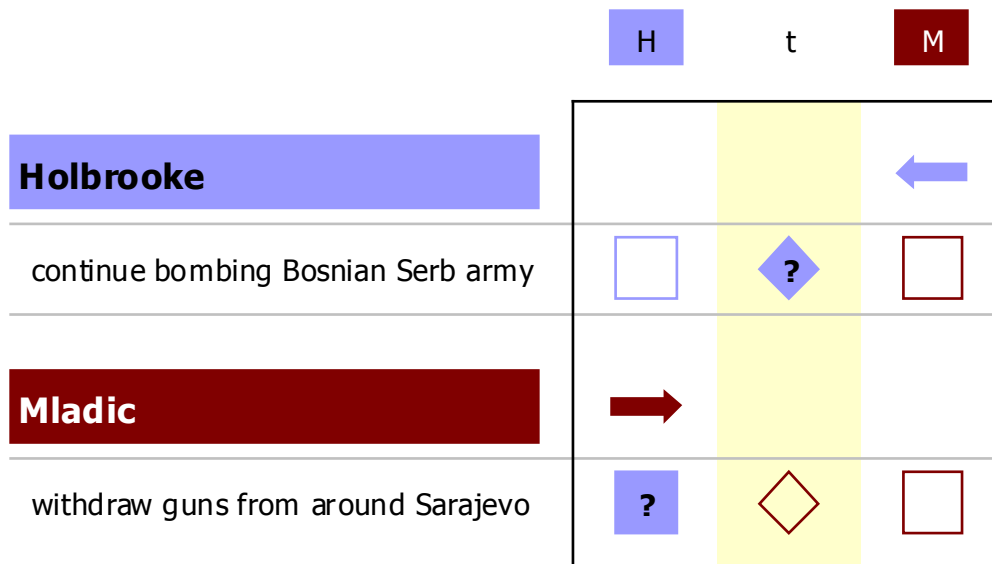
Figure 3 *Confrontation between Holbrooke and Mladic*

represent the preferences of that party for the other's position over the threatened future. Samantha prefers her boss' position (where she still has a job) over the threatened future (where she resigns), while her boss prefers the threatened future to Samantha's position.

Once the confrontation has been fully defined, we can see whether the parties are already in agreement—i.e., are expressing a willingness to collaborate. If they are, their positions will be compatible. In Figure 2, however, we see that there is a disagreement over the timing of the pay award.

When parties cannot come to a mutually satisfying agreement, the confrontation contains a number of tensions that create pressures on the parties. It can be shown mathematically that there are only five[2] forms of tension (or dilemmas) that need to be considered by the analyst. If none of these are present in the model then the parties must be in (stable) agreement. The five forms of dilemma are:

- Threat—the threat is not credible;
- Rejection—the threats against us are sufficient;
- Persuasion—our threat is insufficient;

- Cooperation—our promises are not credible;
- Threat—the promises of others are not credible;

Each of these dilemmas places particular pressures on parties to change the confrontation. This usually involves changes to the *structure* of the confrontation (e.g., the addition of a new party or option), although it may involve changes within the existing structure (e.g., a change of preference). The existence of a particular dilemma merely indicates a problem to be solved (e.g., that a threat needs to be made more credible). Coming up with a specific change is a creative act that sits outside of the formal modeling activity.

When faced with dilemmas, parties return to either the "scene-setting" or "build-up" phases to redefine the interaction. This is the process by which the definition of the interaction is continually refined to address only the pertinent issues—i.e., the dilemmas. Any effort expended on activities not designed to resolve dilemmas is, by definition, off-topic.

Confrontation Management tends to result in relatively small models. In doing so, it recognizes the reality of human interaction. When people interact, even over immensely complex issues, it always comes down to a few key issues. Of course, there may be hundreds

_____
2. We ignore the Positioning dilemma here it has a more specialized role than the other five.

	S	a	B
Samantha			
quit	□	◇	□
Boss			
raise salary now	▬	◇	□
raise salary later	?	?	?
reduce requests for late working	?	?	▬

Figure 4 *An evolution of the initial confrontation*

of interactions (e.g., over a multilateral treaty), but each one will be relatively small. It is just not possible for people to engage in a meaningful interaction over hundreds of individual points simultaneously. Any approach that attempts to represent human interactions as being expansive in time or space fails to accept our fundamental limitations as cognitive beings.

As an example, consider U.S. negotiator Richard Holbrooke's confrontation with Bosnian Serb commander General Ratko Maldic in Dobranovci, near Belgrade, in September 1995. The confrontation is modeled in Figure 3. It is hard to image a more complex issue than this one, but the confrontations undertaken by the parties at each point were likely to be fairly small—in terms of the size of the model. This is not to say that the background to the confrontation was not immensely complex—of course it was—but people do not draw directly on these details in their interactions. They can't. They'd be overwhelmed.

Let's return to the confrontation in Figure 2 to consider how it might evolve. We see that Samantha has a Threat dilemma—her boss is not convinced that she will quit. The inad-

equacy of Samantha's position places pressure on her to change the form of the confrontation. Figure 3 illustrates such a change. In this new confrontation, Samantha has abandoned her previous threat to resign. She has also offered to accept a delayed pay rise—if her boss stops asking her to work late (a new option).

Samantha's new position is one that her boss is willing to accept—although there are still issues of trust to be worked out (Cooperation and Trust dilemmas). In general, a confrontation may have to be redefined many times, to eliminate a range of dilemmas, before an agreement can be struck. Indeed, there is no guarantee that an agreement will *ever* be struck. The parties' positions may be such that the dilemmas can never be completely eliminated (Israel-Palestine?).

Confrontation Management allows the essential elements of an interaction to be identified through the process of dilemma elimination. This focuses the search for new elements on issues germane to the confrontation and, even more importantly, provides us with an indication of when our search is complete. Of course, the resolution of one confrontation
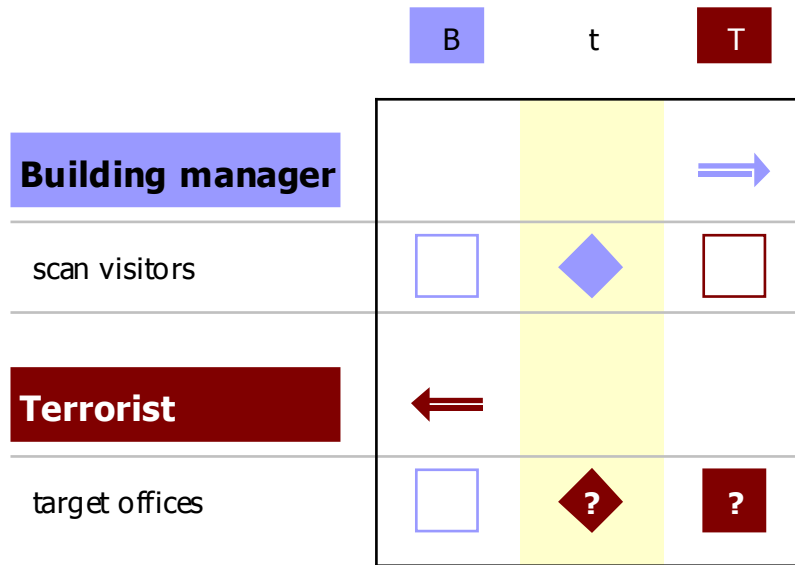
	B	t	T
Building manager			⇒
scan visitors	☐	◆	☐
Terrorist	⇐		
target offices	☐	?	?

Figure 5 *Security model (step 1)*

often leads to the start of another. Without Confrontation Management, it becomes difficult identify these boundaries, leading to the perception of complex interactions as "one big ongoing mess".

Complexity thinking via Confrontation Management

Let's now return to our five main elements of complexity thinking. We will argue that the utilization of Confrontation Management encourages, and supports, the consideration of each of these elements when modeling complex social systems.

Addressing boundary critique via Confrontation Management

The temptation in boundary critique is to err on the side of caution by casting the net wide. However, over-specification leads to a drain on resources. Ulrich's rationally justified boundary represents an attempt at pragmatism, but it still leaves us on our own when it comes to defining the boundary of a single perspective.

Confrontation Management provides us with a directed process for exploring the limits of our problem space and, more crucially, it provides us with a definition of when those limits have been reached. By starting off with the core confrontation (e.g., two parties disagreeing over one option), we can utilize

the process of dilemma resolution to increase our boundaries based on the immediate context. This ensures that our boundary expansions remain germane to the problem at hand.

During the "scene-setting" phase of Confrontation Management modeling, parties to the interaction draw in any information they feel will help their case. However, it immediately becomes apparent, through comparison of parties' positions, that there is no disagreement on many factors. Such information can then be dismissed (reducing the boundary) as not representing a defining attribute of the confrontation. Thus the boundary is kept manageable, but sufficiently rich.

The completion of the "scene-setting" phase leaves us with an informationally-closed rationally justified boundary. While the parties may disagree as to the terms in use, they all understand what is meant by those terms.

In interactions designed to changes the intentions of another party, it is important to remember that perception is very much reality. Novice Confrontation Management analysts have a tendency to include all the things that a party believes it could do in the model. None of this matters. What *does* matter is what the other parties believe a given party is capable of—even if the given party knows this to be false. The actions that a party knows it can take—i.e., the options open to it—are fairly limitless.
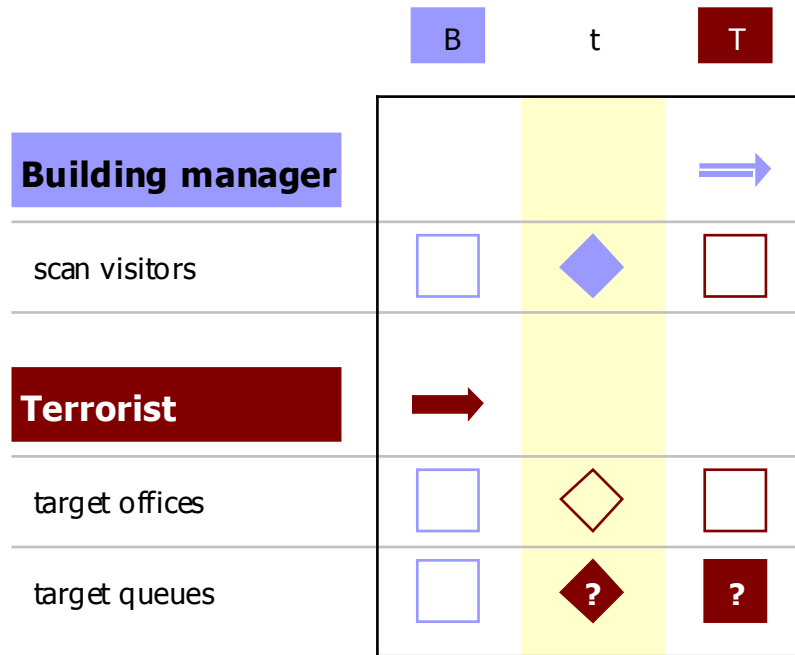
Figure 6 *Security model (step 2)*

However, the options that a party ascribes to another party tend to be pretty focused. Again, this helps contain the boundary without compromising the integrity of the analysis.

Confrontation Management provides us with an interesting perspective on the significance of affected stakeholders. These would generally not be included in a Confrontation Management model as they have no direct impact on the interaction (e.g., no significant options). However, they often do become important when represented by their representatives (or agents)—such as lawyers in a class-action suit. In these cases, the representative becomes a party to the interaction as he can take action that is of interest to other relevant parties.

In this sense, Confrontation Management could be seen as amoral (as opposed to immoral). It would fail to identify potential victims as stakeholders if their lacked control. However, based on the authors' experience, most affected stakeholders have some kind of control in our highly connected, media-obsessed age. We have never personally experienced a case where a policymaker felt confident in dismissing a highly affected stakeholder from an analysis.

It's also worth reflecting on how truly disempowered, affected stakeholders fare in the real world. It is hard to argue, based on the evidence, that policymakers take them into consideration. Witness, for example, the people of Diego Garcia. The reality of the situation is that affected stakeholders must develop ways to transform themselves into involved stakeholders if they are to be taken seriously. Any approach that suggests otherwise would be eschewing the political reality.

Let's have a look at an example of how an unexpected option can arise from the process of dilemma elimination. Figure 5 illustrates an extract from a wider security analysis model that one of the authors developed with a client. In this model, we see that the terrorist has a Rejection dilemma, as the risk of being caught means that he benefits from picking a softer target (i.e., not attacking the client's premises).

However, a "red-team" analysis that stepped into the terrorist's shoes, resulted in a model similar to that shown in Figure 6. Here we see that the terrorist has eliminated his Threat dilemma by realizing that the long queue of people waiting to be scanned represents an attractive target that is *outside* the building's security perimeter. Hence, the scanning equipment had better be efficient, or it may have the *opposite* effect to the one that is
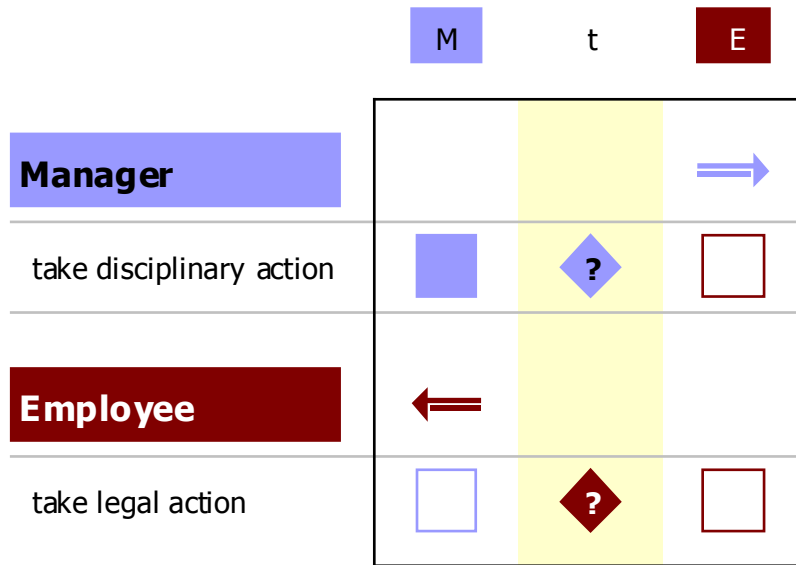
Figure 7 *Representing different perspectives in an Options Board*

desired!

Addressing pluralism via Confrontation Management

Pluralism is in the soul of Confrontation Management. Models are developed by combining the views of the multiple parties to the interaction. Whereas many organization modeling approaches struggle to represent conflicting views, diverse perspectives are the lifeblood of Confrontation Management. Without them, the interaction "collapses" into no more than a pure collaboration.

Confrontation Management also allows us to start making sense of all these multiple perspectives. Consideration of multiple perspectives clearly causes an explosion in the amount of data that must be processed by policymakers. The ways in which these perspectives interact can be impossible to comprehend without some kind of organizing, or sensemaking, framework. Options Boards provide such a framework. They succinctly represent a plurality of perspectives and interweave them to create a single, comprehensive representation.

Another way in which Confrontation Management supports pluralism is in its ability to support analysis using semantic abstractions. Different stakeholders will often use different labels for the same object—labels which will carry different emotional connotations.

For example, a group of wildcat strikers may refer to their most militant member as their leader—an honorarium that their employer may not wish to confer on him.

If a confrontation is defined purely in narrative terms, it can be difficult to introduce neutral terms while retaining an effective understanding of the dynamics of the confrontation. When using Confrontation Management, the formal structure applied to the confrontation reduces the reliance on labels. Parties and options, the main source of these semantic differences, fade into the background once positions and stated intentions have been defined—e.g., the focus shifts from the personalities to the interaction.

A colleague of the authors provided a compelling demonstration of this when he was asked to assist in resolving a highly classified confrontation. On meeting the client, he found that they could not provide him with the names of the parties to the confrontation, or details of the option available to each party. Using only abstract labels, such as "Party A", he was able to assist the client in developing a resolution strategy.

As an example of how Confrontation Management is able to manage different perspectives, consider the confrontation recently faced by a friend of one of the authors. She had an employee who she *had* to subject to disci-
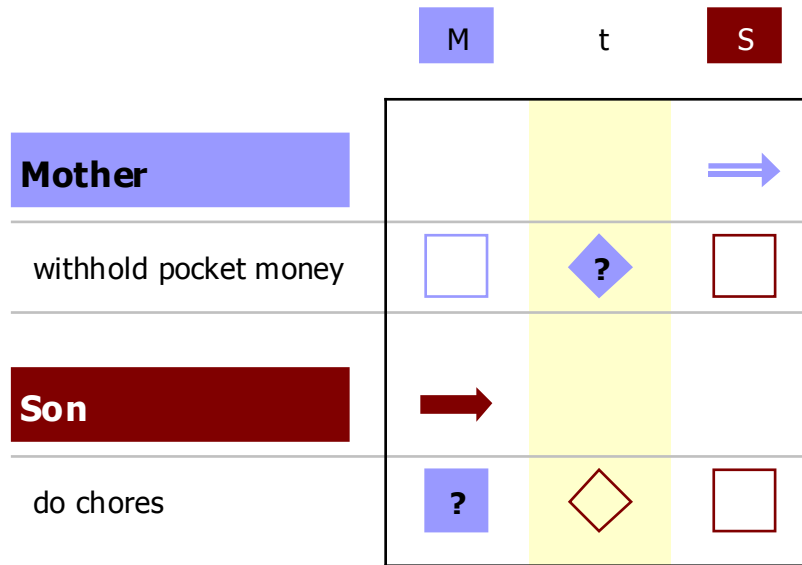
Figure 8 *Mother and son confrontation*

plinary action. There was no discretion in this matter—company policy dictated it. However, the employee refused to see it this way. He was convinced that she had the power to prevent this and threatened to take her to court. The resulting Options Board is shown in Figure 5.

If this model represented the manager's perspective alone, the option to "take disciplinary action" would not be on the board. It is not something that was within the manager's control. However, as it was perceived differently by another party (the employee), it played a significant role in the confrontation. Remember that perception is reality when modeling interactions—and the employee perceived the manager to have had discretion in this matter.

Addressing synthesis via Confrontation Management

When used descriptively, Confrontation Management has a light theoretical touch. It provides a mechanism for describing an interaction, and then identifies internal inconsistencies between the parties' objectives and their current situation. These inconsistencies are then used to prompt creative restructuring of the interaction.

Does the Options Board representation place unnatural constraints on the specification of an interaction? The Options Board was designed to formalize the way in which people naturally communicate in confrontations. They specify what they want from others, and what they are willing to give in return. Threats are either presented explicitly or form an implicit backdrop to the discussions.

Over the course of many engagements, spanning years, the development of Options Boards has been shown to emerge naturally from the descriptions of the parties to the interaction. The biggest challenge is in getting parties to accept that they are participants in a complex social interaction in the first place. Many, especially those who represent powerful organizations, struggle to wean themselves off their reliance on "command and control" planning.

The critical dynamic in Confrontation Management—the redefinition of the interaction in the face of dilemmas—sits outside of any theoretical constraints. Confrontation Management attempts no more than to direct the creative energies of the policymakers down a fruitful path. The structure of the model derives directly from the unfettered verbal jostling of the stakeholders, and the search for creative solutions is direct internal inconsistencies in this model. It is argued that Confrontation Management is fairly permissive given the degree of structural insight it can bring to the table.

Transparency helps to prevent models diverging too far from the context they are being used to study. All the data in a Confrontation Management model is displayed on the Options Board. There are no hidden assumptions. Only the stated positions and intentions of the stakeholders are represented—there is no external data to be assimilated by policymakers. Ultimately, a Confrontation Management planning session produces a set of actions to be taken to achieve a final position. These actions, along with their intended effects, can be critiqued separately from the models used to elicit them. Policymakers are not enslaved by Confrontation Management models.

Addressing emergence via Confrontation Management

The key dynamic in Confrontation Management is the evolution of the interaction as a consequence of tensions (dilemmas) between the expressed perspectives of the stakeholders. Confrontation Management formally identifies those tensions, but it is the responsibility of the stakeholders to transform the structure of the interaction.

The value of Confrontation Management lies in its ability to cut to the chase. It encourages stakeholders to focus on the relevant areas of the interaction, and points them in the direction of possible solutions. It helps policymakers to organize their thoughts, and see the implications of them, but leaves them free to develop novel solutions.

Obviously, as one stakeholder acts (through communication) to change the structure of the interaction, other stakeholders will respond to that action. The resulting interaction will need to be remodeled (via an Options Board) leading to a new set of dilemmas.

Returning to our Holbrooke/Mladic confrontation in Figure 3, we can see that Mladic has a Persuasion dilemma—he is unable to persuade Holbrooke to cease bombing the Bosnian Serb army. Confrontation Management can, formally, offer Mladic the following advice:

• Look for a compromise by addressing Holbrooke's concern about Mladic's unwillingness to withdraw his guns, or;

• Increase pressure on Holbrooke by strengthening the impact of his (Mladic's) threats.

Note that the advice does not include anything about looking for a compromise on the bombing of the Bosnian Serb army. Both parties already agree that they want this—it's part of both positions.

So, given this advice, Mladic could look to up the ante. He may decide to increase the pressure on Holbrooke by taking NATO hostages. This would make the threatened future (of continued bombing) much less palatable to Holbrooke as he would be bombing his own troops. In this case, he may start to prefer Mladic's position to continued bombing.

In no way would Mladic's decision, in this example, have been predetermined by the use of Confrontation Management. Confrontation Management merely highlights the *types* of communication that may progress the interaction (to a stakeholder's benefit). The actual form of the communication is a result of creative thinking.

Addressing timeliness via Confrontation Management

Options Boards are ephemeral devices. They bring some insight to an interaction at a point in time and—like Keyser Söze—then they're gone. An Options Board remains current for as long as the stakeholders are setting out their positions and intentions. As soon as someone changes the structure of the interaction—e.g., by adding a new element to an offer—a new Options Board emerges.

Something that is often not appreciated about interactions is that they are a permanent state of affairs. Policymakers often view the need for Confrontation Management as event driven—i.e., "I have a confrontation to solve today." However, a more valuable use of the approach is in reviewing and monitoring the status of your interactions on a regular basis. Interactions are evolving second-by-second and, as such, require regular review and intervention if they are to be managed effectively.

Confrontation Management does not require the development of huge models, or

the compilation of massive databases. It is a lightweight technique designed to mirror the realities (e.g., tempos) of the situations it is required to address. When teaching Confrontation Management, the authors often demonstrate the immediacy of the approach by directly modeling the spoken narrative. For example, a student recently mentioned a problem she was having with her son. She gave the following description:

My son refuses to do his chores. I've tried docking his pocket money, but it doesn't seem to have any impact—especially as I tend to give in.

From this description, we immediately sketched the Options Board in Figure 6.

Confrontation Management modeling is able to keep pace with the dynamics of the real world interactions, ensuring model remain fresh, relevant and timely.

Summary

This article has attempted to show that Confrontation Management is a powerful tool for managing complex social interactions. While it provides a formal, structured framework, it does not impose suffocating limitations on the analysis/stakeholders—allowing the realities of the interaction to remain at the fore.

In summary, we recommend complexity research and practitioners look closely at this technique. It could represent a powerful addition to your armory. For those wishing to studying Confrontation Management in more detail, you may wish to download a trial version of the Confrontation Manager (http://www.confrontationmanager.com). This includes a "Getting started" guide that will help to get you up and running with building your own models.

Acknowledgement

References

Flood, R.L. and Romm, N.R.A. (1997). *Critical System Thinking: Current Research and Practice*, ISBN 9780306454516.

Howard, N. (1998). "n-person 'soft' games," *Journal of the Operational Research Society*, ISSN 0160-5682, 49(2): 144-150.

Midgley, G. (2000). *Systemic Intervention: Philosophy, Methodology and Practice*, ISBN 9780306464881.

Richardson, K.A. (2002). "'Methodological implications of complex systems approaches to sociality': Some further remarks," *Journal of Artificial Societies and Social Simulation*, 5(2).

Richardson, K.A. (2008). "On the limits of bottom-up computer simulation: Towards a nonlinear modeling culture," in L. Dennard, K.A. Richardson and G. Morcol (eds.), *Complexity and Policy Analysis: Tools and Concepts for Designing Robust Policies in a Complex World*, ISBN 9780981703220. pp. 37-53.

Richardson, K.A. (2005). "The hegemony of the physical sciences: An exploration in complexity thinking," *Futures*, ISSN 0016-3287, 37(7): 615-653.

Midgley, G. and Richardson, K.A. (2007). "Systems theory and complexity: Part 4 - The evolution of systems thinking," *Emergence: Complexity & Organization*, ISSN 1521-3250, 8(1-2): 166.

Surowiecki, J. (2005). *The Wisdom of Crowds*, ISBN 9780349116051.

Ulrich, W. (1995). *Critical Heuristics of Social Planning: A New Approach to Practical Philosophy*, ISBN 9780471953456.

Andrew Tait is currently cofounder and Chief Technology Officer of Idea Sciences, a Virginia-based software and consulting firm specializing in the creative use of technology to improve organizational decision-making. During his career he has designed commercial, off-the-shelf, solutions for strategic planning, performance improvement and conflict management. This has led to numerous consulting and training relationships with major commercial and government organizations. Prior to forming Idea Sciences, Andrew held various commercial (technology consulting), government (defense) and academic (business) positions. Andrew's research interests include: decision-making, performance improvement, electronic voting, virtual communities; conflict management; visualization and; improv-

ing understanding of complex socio-technical systems.

Kurt A. Richardson is the Associate Director for the ISCE Group and is Director of ISCE Publishing, a recently founded publishing house that specializes in complexity-related publications. He has a BSc(hons) in Physics (1992), MSc in Astronautics and Space Engineering (1993) and a PhD in Applied Physics (1996). Kurt's current research interests include the philosophical implications of assuming that everything we observe is the result of complex underlying processes, the relationship between structure and function, analytical frameworks for intervention design, and robust methods of reducing complexity, which have resulted in the publication of over thirty journal papers and book chapters, and ten books. He is the Managing/Production Editor for the international journal *Emergence: Complexity & Organization* and is on the review board for the journals *Systemic Practice and Action Research*, *Systems Research and Behavioral Science*, and *Tamara: Journal of Critical Postmodern Organization Science*. Kurt is the editor of the recently published *Managing Organizational Complexity: Philosophy, Theory, Practice* (Information Age Publishing, 2005) and is coeditor (with Andrew) of the forthcoming book *Complexity and Knowledge Management: Understanding the Role of Knowledge in the Management of Social Networks* (due August 2008). Kurt is also a fully qualified spacecraft systems engineer, and is currently developing a software environment to support the integration and testing of complex engineered systems.