The Recognition-Primed Decision Model

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A KEY Objective Force premise is to achieve a significant increase in operating tempo (OPTEMPO). Fundamental to increased OPTEMPO is gathering, integrating, and applying information that helps military planners anticipate and counter threats before an adversary can act. To act faster than the enemy can, the Army currently uses a procedural and cumbersome military decisionmaking process (MDMP) that military planners often abbreviate.[1] However, little guidance exists on how to abbreviate the process. U.S. Army Field Manual (FM) 101-5, *Staff Organization and Operations*, gives suggestions, but no real guidance.[2] To take full advantage of the Objective Force's new capabilities, the Army needs a strong, fast, flexible decisionmaking process.

In 1989, Gary A. Klein, Roberta Calderwood, and Anne Clinton-Cirocco presented what they called the recognition-primed decision (RPD) model, which describes how decisionmakers can recognize a plausible course of action (COA) as the first one to consider.[3] A commander's knowledge, training, and experience generally help in correctly assessing a situation and developing and mentally wargaming a plausible COA, rather than taking time to deliberately and methodically contrast it with alternatives using a common set of abstract evaluation dimensions.[4]

Klein, S. Wolf, Laura G. Militello, and Carolyn E. Zsambok show that skilled decisionmakers usually generate a good COA on their first try.[5] J.G. Johnson and M. Raab replicated this finding, extending it to show that when skilled decisionmakers abandon their initial COA in favor of a later one, the subsequent COA's quality is significantly lower than the first one.[6] Johnston, J.E. Driskell, and E. Salas show that intuitive decision processes result in higher performance than do analytical processes.[7] The findings call into question the rationale behind MDMP, which assumes that good decisionmaking requires generating and evaluating three possible COAs to find the best solution.

John F. Schmitt and Klein developed the Recognition Planning Model (RPM) from research on the RPD model and on several studies of military planning exercises to codify the informal and intuitive planning strategies skilled Army and U.S. Marine Corps (USMC) planning teams used.[8]

The RPM has stimulated interest in the military ever since Schmitt and Klein described it. Individual Army and USMC battalion commanders have experimented with the RPM and found it useful. The British military has been conducting experiments with the RPM, demonstrating its face validity.[9] Peter Thunholm performed the most stringent research, contrasting performance for division-level planning groups in the Swedish Army that used either a variant of the RPM or the Swedish Army version of the MDMP.[10]

Thunholm found that the RPM permitted an increase in planning tempo of about 20 percent. Thunholm also observed that RPM plans were somewhat bolder and better adapted to situational demands than MDMP plans, which tended to be more constrained by an over-compliance with current doctrinal templates. The Swedish Army has adopted a variant of the RPM, and Sweden's National Defence College provides training on tactical planning aided by that model only.

Rather than trying to replace the MDMP, Schmitt and Klein sought to codify the way planners actually work. Therefore, the RPM does not feel awkward or unnatural to planners, who often say, "We're already doing this," which is exactly the in-

tent—to codify existing effective planning practices that reflect the best planning practices that have evolved over decades.

The RPM, which reflects current theory and research, is a practical application of the RPD model. The RPM is consistent with natural practices and enables an increase in tempo without losing efficacy, which offers a potentially useful application for the Objective Force.

RPM strategy is for commanders to identify their preferred COA so the staff can work on detailing and improving it. (See figure.) The first stage (understand mission/conceptualize a COA) of the RPM is a key stage that conceptually differs most from other stages. Once a unit receives a mission from higher headquarters, the commander and staff try to understand that mission while also deciding how to proceed. Identifying a base COA early can guide mission analysis. The RPM depicts these two functions during the same stage. Commanders can describe this base COA or ask the staff for input.

If commanders have not identified a base COA, the staff can ask for suggestions. Commanders can choose to do the initial conceptualization of a COA on their own or with a small group of key staff members or subordinate commanders. If the military situation is unfamiliar or undeveloped, a substantial amount of mission analysis might precede a COA's conceptualization. If the commander is familiar with the military situation, mission analysis might occur quickly. The RPM does not freeze a planning staff into a single strategy; it enables the commander and staff to search for options if the situation is so unfamiliar that the commander cannot recognize what to do and provides techniques for collaborative work.

The next stage of the RPM is for the staff to "test and operationalize the COA." As staff members do this, they might already be preparing operations orders (OPORDs) or finding flaws that disqualify the COA. The staff might discover a COA that seems significantly better than the one the commander has identified. In such cases, it makes sense to contrast the two options by imagining the consequences of implementing each, not by reviewing them on a common set of abstract dimensions.

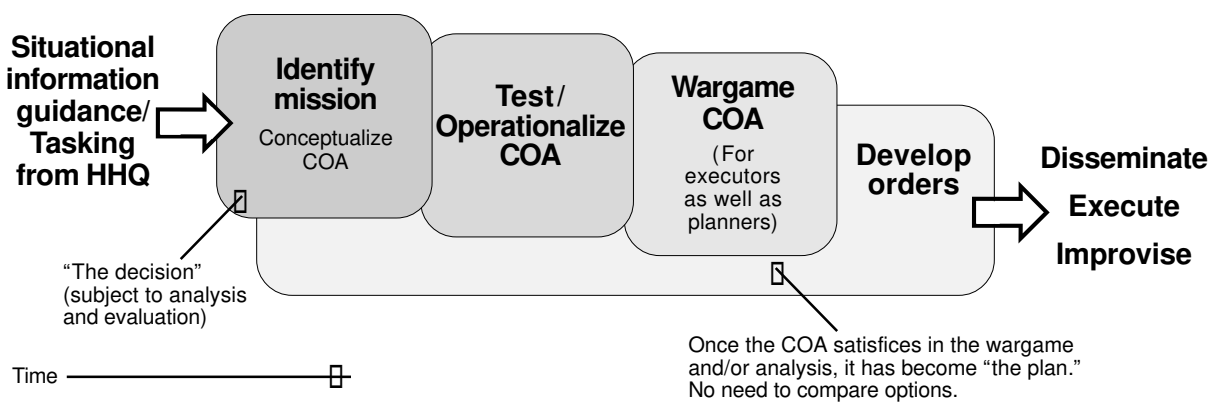
The staff then wargames the COA to see if the plan will hold up against enemy COAs. If there is time pressure, wargaming can also serve as a rehearsal, enabling the staff to begin building execution matrixes.

The next step is developing an OPORD, which is a cut-and-paste procedure since this work began during the "test and operationalize the COA" phase. Often, when using the RPM, the staff only considers one COA; consequently, unlike when using the MDMP, the staff need not wait until after a COA selection stage to develop an OPORD. Finally, it is important to realize that the RPM has a variety of feedback loops during each stage.[11]

A comparison of the MDMP with the RPM field manual reveals several key distinctions between the two:

- The rationale behind the models is completely different. The MDMP uses a decision analytic rationale called multi-attribute utility analysis. The RPM uses a recognition-primed decision rationale.
- Research support is weak for the MDMP's basic assumption that developing and comparing several COAs results in finding a superior COA.
- The RPM builds on experience and expertise. The MDMP uses analytical procedures, which can prevent or hamper an experienced planner from using the ability to quickly assess a situation and come up with a plausible COA.

The Basic Recognitional Planning Model



- Time pressure degrades the MDMP, whereas the RPM capitalizes on time-constraints.
- The MDMP is rarely fully implemented in the field, whereas the RPM describes a natural strategy. Essentially, the RPM truncates stage III of the MDMP (the generation of multiple COAs) and stage IV (wargaming all three COAs) and eliminates stages V (COA comparison) and VI (COA approval).

We also compared the RPM with the somewhat vaguely described abbreviated MDMP. While the RPM and abbreviated MDMP rely on developing a single COA, in the abbreviated MDMP, doing so is doctrinally viewed as a highly degraded planning strategy. In the abbreviated MDMP, the commander and staff are assumed to have followed all of the MDMP steps, although they might perform some automatically. Thus, in the abbreviated MDMP, developing a single COA is the last resort. The abbreviated MDMP would restore some of the MDMP steps that had been skipped or slighted if more time became available. In the RPM, additional time would be used to do more wargaming or to enable subordinate units to increase their preparation.

Method

In 2003, the Fort Leavenworth Battle Command Battle Laboratory (BCBL) assessed the RPM during a 2-week experiment. An Objective Force Unit of Action (UA) (brigade) staff was assembled on an ad hoc basis. The group included retired senior officers and active duty officers from several Army battle labs. In addition, the BCBL used a notional Unit of Employment (UE) headquarters to provide guidance to the UA, which had several battalion commanders under its control.

The BCBL devoted 2 days to training the UA staff in the RPM. During two practice runs, the staff, configured in staff sections, used electronic tactical decision games to stimulate the decisionmaking process. The BCBL prepared a detailed manual to document the steps of the RPM and to describe various RPM tools.[12]

The next phase of the experiment included 5 days devoted to exercising the RPM, beginning by introducing a Caspian Sea scenario. The three subsequent planning-execution loops were variations of offensive operations. The staff then received a new mission involving stability operations and support operations and spent the day engaged in planning. A team of researchers using observations, questionnaires, and in-depth interviews of key personnel collected a considerable amount of data during the experiment.

Preliminary Findings

Participants had little trouble using the RPM for the experimental scenarios. The face validity for the RPM was high. A typical comment was that they were just doing what they always did and that the RPM did not seem like anything new. Of course, this was the point of the RPM—to reflect and codify a commander's typical planning strategies. Participants estimated that the RPM took at least 30 percent less time than the MDMP did.

Most participants favored the RPM from the beginning, and the number of favorable comments increased each day while unfavorable comments decreased. But participants did raise some concerns. They felt that while using the RPM they had a tendency to rush through mission analysis to get into conceptualizing the COA. They felt that some MDMP mission-analysis tools could be usefully incorporated into the RPM.

One participant, who had been most critical of the RPM at the start, pointed out that mission analysis can really benefit from knowing the COA early on and that the two processes can be done again and again. He wanted to alter the RPM diagram to better reflect this iteration. Actually, the current RPM manual reflects the iteration, which is why the figure lists both processes in the same box. Using the COA to guide mission analysis is another advantage of the RPM.

Another concern was that under battle conditions a commander might be distracted and have to depend on the staff for understanding the situation and conducting planning. Others disagreed, arguing that the deputy commander could drive the RPM process if the commander was not available. The next rotation in the experiment used the deputy commander as the key decisionmaker to demonstrate this point.

Several participants recalled instances where they had to suffer with inadequate plans initiated by inexperienced staff members. The RPM allows the commander to drive the process, using the staff to detail the plan and catch flaws. Further, even if the commander were hurried, it seemed better to spend 20 minutes at the beginning identifying the base COA than to spend 10 hours later fixing inadequate plans. If the commander is involved from the beginning with the conceptualizing, the benefits can ripple throughout subsequent planning and execution.

New techniques available in the Objective Force will allow advanced collaboration between commanders at various levels without needing to physically assemble at a single location. Our view is that

the RPM is quite commander-driven, as opposed to staff-driven, and might be more compatible with Objective Force intentions. Although the process is commander-driven, the commander's willingness and ability to "uncover expertise" in the staff is key to the RPM, especially in novel situations. We observed two instances when the UA commander deliberately sought expertise that could overcome problem areas in the COA—once in the context of an offensive operation and once in the context of the support operations exercise.

One question that arose was whether commanders and staff officers performing unfamiliar missions such as stability operations or support operations could use the RPM. Clearly, commanders lacking experience with regard to a mission will generate lower-quality plans when using the RPM. However, planning staffs will also generate lower-quality plans using the MDMP if they are responding to unfamiliar missions. In fact, this objection is not valid because the RPM manual allows the staff to provide a thorough mission analysis and to suggest a COA if a commander cannot generate an early COA.

US Army

Soldiers brief a potential course of action at the Warrior Preparation Center, Einsiedlerhof, Germany.

The fact that a situation is novel does not necessarily enhance the relative advantage of a multiple-option planning model over a single-option planning model. The key to a good solution lies in the ability to correctly assess the situation, since that assessment will guide the judgment about what is a good COA. Contrary to this concern, the RPM enables a commander to modify a plan as he and his staff discover its inadequacies and provides them with the time to cycle back and replace a poor plan with an effective one.

The RPM introduced a new process—a "PreMortem"—for identifying critical flaws in a plan, which was presented as a way to counter the potential inaccuracies of a commander's intuition. Although the PreMortem was an optional step at the end of the first stage, the staff insisted on running a PreMortem in every planning rotation and moved it up earlier and earlier in the cycle. Most participants considered the PreMortem quite useful.

Another new process called the "commander's interview" encouraged the commander to state clearly the rationale and intent behind the preferred COA.[13] The new process provides an organized method for staff members as well as subordinate commanders to question the commander's thinking behind the COA. This process took place spontaneously during the exercise, but some participants emphasized the possible benefits of such a deliberate process in situations where the commander is not naturally expressive.

When the UA received a fragmentary order that required drastic changes to its plan, having a base COA to guide new planning seemed to make replanning smoother. Participants did not show the typical signs of resisting change and feeling locked into the plan because of "sunk" costs already spent on planning or of feeling that the planning time had been wasted.

Despite using the RPM, participants gravitated to a number of MDMP tools, and future exercises might include these as parts of the RPM or as options. For example, during mission analysis,

participants continued to list specified and implied tasks, assumptions, and concerns. They developed maneuver graphics when operationalizing the COA, and they used attack guidance matrixes and collection and support plans. During wargaming they constructed an execution matrix.

The orders or other products that the RPM generates are similar if not identical to the products the MDMP generates. That participants never mentioned a need for a COA generation or evaluation tool as part of the RPM is interesting. The most requested tools were those that helped participants visualize the battlespace, such as an automated version of the modified combined obstacle overlay.

Participants also concluded that some means to rapidly sketch and disseminate the base COA was imperative. Using the collaborative tools available was time-consuming and frustrating. Until they could prepare a more detailed electronic map, all they needed was a hand-drawn sketch, which the commander could disseminate quickly. This is in line with earlier observations of experienced decisionmakers who tend to concentrate on understanding the situation as fully as possible.[14] When the situation is well understood, the best COA often suggests itself to the decisionmaker. The conclusion is that tools that make visualization of the battlespace easier are more helpful than COA generation and evaluation tools.

The Outcome

One participant, a colonel, cautioned participants to be wary of 26 years of legacy thinking versus 5 days with the RPM. He emphasized that this first demonstration was not sufficient to justify replacing the MDMP with the RPM. He did feel that the RPM had demonstrated sufficient face validity to warrant additional research.

The framework behind the RPM suggests a different set of planning tools than those the MDMP needs. Instead of needing tools for generating and comparing COAs, the RPM needs tools for sizing up situations and facilitating replanning as part of the cycle of continuously improving and adjusting the COA. ***MR***

NOTES

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