

What to Expect When You Don't Know What You are Expecting: Vigilance and the Monitoring and Evaluation of an Uncertain World

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Rob Goble¹ , Edward R. Carr^{2,3},
and Jon Anderson⁴

Abstract

Complexity and uncertainty are long-standing challenges for global development projects. Coping with both requires flexibility and adaptation, the ability to identify unexpected circumstances, seize opportunities, and respond to threats. Vigilance is critical; it resides within the domains of monitoring, evaluation, and learning. In practice, maintaining vigilance is difficult, partly because effective vigilance has a dual nature. Normal, Type 1 vigilance, is anchored in knowing what to look for. It demands focus and attention to designated indicators. Type 2 vigilance looks for what project preparations failed to anticipate. It demands defocusing and openness; it sits outside contemporary design of monitoring and evaluation as it must question the assumptions in project design and implementation. We consider the role of both types of vigilance in global development and difficulties in maintaining both simultaneously. We identify pathways for improving the practice of vigilance and suggest practical steps in a template for pilot efforts.

Keywords

vigilance, monitoring and evaluation, uncertainty, adaptation

Introduction

Complexity and uncertainty have, for some, been long-standing preoccupations in the field of international development¹, but the uptake of these concepts and their implications has been slow. Among those concerned with these issues, this preoccupation has taken different forms at different times, for example, framed as a concern for the complex role of conflict in development (Hirschman, 1984,

¹ International Development, Community, and Environment Department, George Perkins Marsh Institute, Clark University, Worcester, MA, USA

² International Development, Community, and Environment Department, Clark University, Worcester, MA, USA

³ Humanitarian Response and Development Lab, George Perkins Marsh Institute, Clark University, Worcester, MA, USA

⁴ George Perkins Marsh Institute, Clark University, Worcester, MA, USA

Corresponding Author:

Rob Goble, Research Professor of Environmental Science and Policy, International Development, Community, and Environment Department, George Perkins Marsh Institute, Clark University, 950 Main St, Worcester, MA 01610, USA.

Email: rgoble@clarku.edu

1994) or as how complexity and systems thinking can help us better understand development outcomes and design better projects (Ramalingam, 2013; Ramalingam et al., 2014). Although still a conversation at the margins of development practice, this concern persists because it speaks not only to the very character of development but indeed to the character of the world in which we live (Patton, 2011; Schwandt, 2008). Development projects seek to influence complex, interlinked, and ever-changing social, ecological, political, economic, and cultural processes such that desired improvements in human well-being are achieved. This complexity breeds uncertainty, more importantly, it amplifies it.

Flexibility and adaptability are key attributes for coping with uncertainty. There is a considerable development literature, including guidance from major development funders, that encourages planning, preparations, and implementation in projects and programs to enhance those capabilities (Department for International Development, 2014; Deutsche Gesellschaft für Internationale Zusammenarbeit, 2013; USAID, 2016). Deployment of such efforts is described in many different contexts as “adaptive management” (Goble, 2018; Goble et al., 2017; Holling, 1978; Kaspersen, 2008). The ideas are simple: 1) recognize that we are dealing with complex adaptive systems, 2) pay attention to what is happening and adjust what we do to suit conditions; and 3) learn from experience what works and what doesn’t and use that learning to improve outcomes in the future. Much of the needed effort lies within the realm of Monitoring and Evaluation (M&E) and its slightly newer version, Monitoring, Evaluation and Learning (MEL). Contemporary guidance urges the alignment of M&E and MEL practice with the need to inform adaptive efforts and to account for complex situations.

Despite the broad trend toward encouraging the addressing of uncertainty and complexity in project M&E, the contemporary practice of development still struggles to integrate sufficient flexibility and adaptability to enable adaptive management. Development donors and implementers often find themselves in situations where their budgets and staffing, whether determined by elected governments or self-selecting private donors, require narratives (often in the form of “theories of change”) which reinforce the idea that projects are formulaic and linear, success can be predicted with some certainty, and therefore every dollar spent on development has an immediate, direct, positive impact in the world. The result has been a near-schizophrenic approach to development, where as an abstraction everyone understands that development is an exercise in complexity that is inherently uncertain, but too often in practice projects are designed and implemented in a manner that ignores helpful theory and engages complex systems and contexts in narrow, linear ways that suggest little to no uncertainty in these engagements. In short, calls for adaptive management are not aligned with the reality of development implementation, and therefore often cannot be implemented in a consistent or meaningful manner. Instead, simplistic, over-certain framings of change produce development projects that continue to be “surprised” by complexity and uncertainty. It is worth remembering, however, as Hirschman (2014 [1967]) observed, these simplistic framings (or the illusion of simplicity) may play a positive role in convincing donors to invest and enable complexity and uncertainty to be encountered in a productive manner.

Although much theoretical attention has been given to structural issues at the intersection of complexity, development, and adaptive management, we argue that moving this conversation forward also requires attention to practical problems in implementation. We point to a conceptual challenge within the practice of monitoring, evaluation, and learning. The challenge is to maintain vigilance, a state of attentiveness with the capability to identify moments when adapting project interventions might be opportune. These might be opportunities for enhanced outcomes or chances to avoid or ameliorate problems that might limit a project’s productive impact. Vigilance is a critical component of MEL practice, and its nuances are often overlooked by the complexity and uncertainty literature in development. Specifically, we argue that there are two distinct types of vigilance: “Type 1” vigilance (T1V) focused on attention to known sources of potential adverse outcomes or positive opportunities,

and “Type 2” vigilance (T2V) focused on recognizing information that can help identify both problems and opportunities when you do not know what you are looking for, such as in complex systems whose dynamics are incompletely understood. Both types of vigilance are needed; however, current incentives and practice emphasize T1V disproportionately and at the expense of T2V.

The multiple barriers to the effective use of T2V derive only partly from institutional settings; they also are inherent in the challenge of maintaining vigilance. In this paper, we suggest practical approaches to overcoming some of both kinds of barriers. In the next section, we consider the role of the two types of vigilance in the context of guidance from development funders. We describe incentives in present-day development practice that discourage conformity with recent policy changes intended to promote flexibility and adaptation. Despite those countervailing incentives, we believe that these policy innovations offer an opening for the improved exercise of vigilance and for more flexibility in practice. In *Surprise and Uncertainty in International Development*, we consider briefly the nature of surprise and uncertainty in development and discuss the implications for vigilance and adaptive approaches. In *Dilemmas in Maintaining Effective Vigilance*, we discuss some difficulties that must be confronted in maintaining both types of vigilance; these difficulties are expressed as a series of dilemmas. In *Piloting T2V in International Development Projects*, we consider pathways for improving current practice and suggest practical steps in the form of a template for pilot efforts that could facilitate improvement while building a constituency for this sort of MEL. We conclude in a Conclusion section with some observations and recommendations on key roles that vigilance of different types might play looking forward.

Guidance for M&E, Theories of Change, and the Role of Vigilance

A relatively recent push among development donors to expand the role of adaptation and learning in MEL presents an opportunity to better connect development practice to the complex and uncertain realities in which development operates. Where prior M&E efforts were heavily focused on capturing project outputs (amounts of money spent, things purchased, number of recipients of materials or training), development donors’ more recent evaluation policies (e.g., Department for International Development, 2013, 2014; Deutsche Gesellschaft für Internationale Zusammenarbeit, 2013; USAID, 2016) have pushed for a broader MEL, including the assessment of outcomes, impacts, and learning about what does and does not work in practice, with the goal of facilitating improved project outcomes. Therefore, contemporary evaluation policy in the world’s largest bilateral donors promotes M&E not only as a tool for accountability but also as a means to adaptive management and learning. We see this revised understanding of MEL as an opportunity to introduce practices and thinking that might address the gulf between contemporary understandings of complexity and uncertainty and the ways they are addressed in development policy and implementation.

In practice, the achievement of policy goals requires much more than policy documents. It is well-understood, in both development and evaluation circles, that there are significant structural barriers to the implementation of a full MEL effort that will live up to the aspirations of contemporary policy.

These barriers include a fixation on the project at hand (Chaplowe & Hejnowicz, 2021), punitive institutional cultures (Chaplowe & Hejnowicz, 2021; Evaluation Gap Working Group, 2006; Natsios, 2010; Pritchett, 2002), rigid budget processes, and shrinking time horizons for development programs (Chaplowe & Hejnowicz, 2021; Natsios, 2010). Much critique of contemporary M&E focuses on these issues (though there are notable exceptions that directly address the challenges of uncertainty and complexity, including Cram & Hopson, 2020; Mertens & Boland, 2020; Patton, 2011; Raimondo et al., 2016; Williams, 2015). We acknowledge these important analyses and critiques, but our focus is different: we draw attention to particular challenges in MEL implementation, challenges that appear under current institutional situations, but which will persist under even the most optimal of structural and institutional conditions. Specifically, we see the rising attention to

adaptability and learning in contemporary MEL policy as highlighting the importance of understanding and facilitating *vigilance* in MEL efforts.

At its most simple, vigilance facilitates ongoing attention to various indications of possible adverse outcomes or positive opportunities. Such indications can be used to inform managers when the exercise of adaptive responses is needed. We call this “normal” or “type 1” vigilance (Goble et al., 2018):

- Type one vigilance is vigilance when you know what you are looking for: watching for warning signals; seeking to fill potentially troublesome gaps in knowledge; keeping up with predictable changes in the hazard context; assuring that response capabilities continue to function.

Historically, development projects have approached M&E efforts through T1V. T1V aligns nicely with the current design and implementation of projects because in practice these projects assume clear and direct connections between interventions and specific outcomes. This assumption is manifest in the theory of change (TOC) approach to project design, which lays out already-understood connections between a challenge in the world and the ways in which an intervention will address that challenge and produce an expected outcome (Figure 1). In its broad focus on T1V, MEL has become congruent with the sorts of project design and implementation practices that squeeze uncertainty and complexity out of the conversation. Further, the main goals of MEL have been to assure accountability in development projects, to ensure that project funds are spent responsibly and that the project delivers the resources and services promised; the desirability of proving accountability reinforces a disregard for uncertainty.

This can be true even in more recent “complexity-aware” MEL efforts that address how to frame and implement M&E in dynamic contexts where there is little agreement on the development

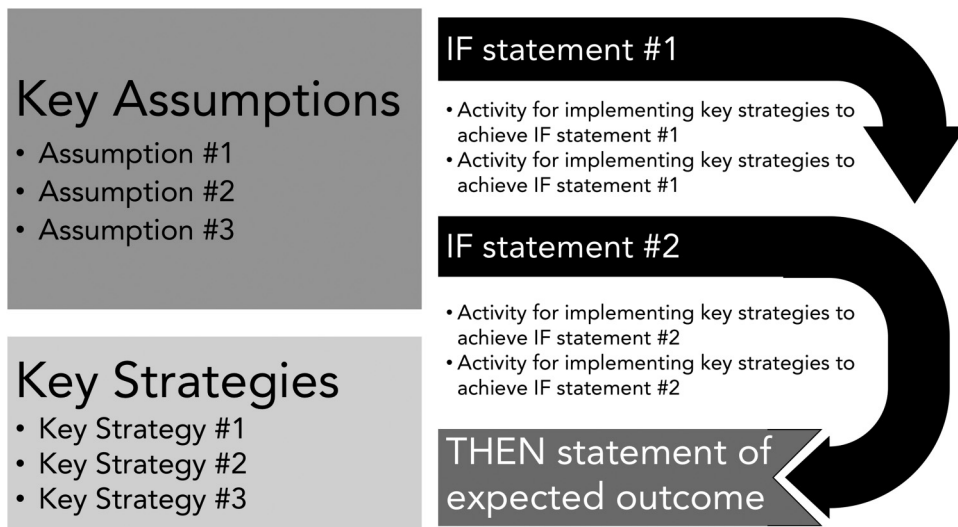


Figure 1. Generic structure of a theory of change. The theory of change starts with key assumptions, lays out “if statements” that define situations which, if true, will make key strategies valid, producing “then statements” of expected outcomes. A theory of change lays out why we believe that if specific project inputs occur, they will produce particular results.

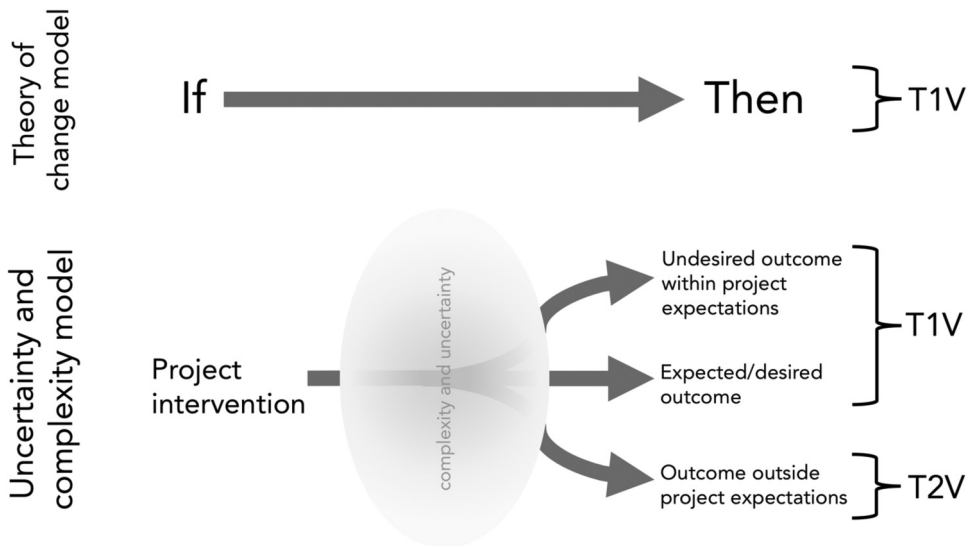


Figure 2. Visual representation of the place of Type two vigilance (T2V) in monitoring and evaluation.

problem at hand and/or little certainty about the solutions for a development problem (e.g., Hummelbrunner & Britt, 2014; Lee, Sommerville, Farley, & Mayega, 2016; USAID, 2018; Williams & Britt, 2014). This work, which provides both conceptual and methodological guidance on how to address the limitations of more standard performance monitoring efforts in complex contexts, frames such efforts as complementary to, rather than challenges to, existing approaches to M&E. For example, USAID sees such work as “useful when results are difficult to predict due to dynamic contexts or unclear cause-and-effect relationships” (USAID, 2018, p. 1). Although the suggestions and the tools offered are potentially useful, the choice of the word “unclear” here is telling. Complexity-aware MEL, while acknowledging irreducible uncertainty, is focused on the uneven and irregular relationship between causes and effects, both of which are taken to be known and measurable (Figure 2).

However, the history of development suggests that the inherent complexity and uncertainty of the socio-ecological systems it engages often produces changes whose implications are uncertain and outcomes that are difficult to foresee no matter how well designed a project might be (Arkesteijn et al., 2015). Responsible project design must anticipate a range of possible conditions and project outcomes and in so doing prepare a lens for T1V and a set of responses to observed events. However, vigilance also becomes an essential means of addressing the surprises and the institutional failures that are not well-addressed through orderly adaptive planning. This requires a different, “questioning,” type of vigilance (Goble et al., 2018):

- Type two vigilance is vigilance when you don’t know what you should look for: preparing for and seeking confusing signals, anomalies and surprises; identifying such puzzles may help to discover mistakes, avoid misconceptions, uncover undreamt of possibilities, correct for failures in institutional structures and seize initially unseen opportunities.

T2V often sits outside the frame of contemporary M&E because it calls into question the general framing of project design and implementation. Such invisibility is even more likely when there

are political goals of projecting certainty in projects whose funding and staffing could suffer in the face of failure.

Although contemporary MEL is engaged with questions of vigilance and uncertainty, much of this work still operates within a T1V lens. In this paper, we argue that the inherent uncertainty of development actions requires us to deal with unanticipated possibilities that are the domain of T2V (Figure 2). Current policies, and, as we discuss below, the institutional incentives around them, fail to promote adequate attention to uncertainty and the specific demands it places on vigilance.

Surprise and Uncertainty in International Development

It is not easy to prepare for effective vigilance in MEL. Uncertainty is one challenge: the likelihood of surprise is another. Development has long been plagued by what are called “surprise” outcomes; projects fail or underperform or perform differently than anticipated. Often, calling them “surprises” is a misnomer as they reflect relatively simple failures (or lost opportunities) to appropriately assess the challenge the project was meant to address, or the conditions in which the project was intended to operate (e.g., Carney, 1996; Li, 2005; Moore, 2000; Scott, 1998). There are many reasons why individuals and institutions might fail to anticipate obstacles or possible resolutions (Hirschman, 2014 [1967]). However, the inherent uncertainty associated with interventions into complex socio-ecological systems means that unexpected possibilities and uncertainties are always present in the development and big surprises are not rare. “Good surprises” happen as well: things might work much better than expected; new resources might be found; or there might be further unanticipated but desirable outcomes. Although it is natural for MEL to concentrate on avoiding project failures, it is our sense that the cost of lost opportunities is significant and might even be larger than the cost of failed projects. Insufficient knowledge and uncertainty are breeding grounds for surprises, but the actual appearance of a surprise is often better characterized as a “failed certainty,” a confidently held expectation that did not transpire.

Unexpected possibilities and the uncertainties that can give rise to them pose distinct but related challenges to project and activity design and management (Goble et al., 2017). We first consider the nature of surprise and its various challenges for management. We then move to the broader issue of uncertainty and its implications for MEL including adaptive management and vigilance.

When a surprise (either positive or negative) occurs, we might well ask, “where did that come from?” and “why weren’t we prepared?” One answer might be a *genuine surprise*, when the event or new knowledge truly could not have been anticipated (Taleb, 2007). Genuine surprises are, however, quite rare (Goble, 2018; Goble et al., 2017). The appearance of the AIDS epidemic was one such case: no one anticipated the combination of a viral attack on the immune system, long dormancy, and the compounding effects of stigma because of transmission through sex and drugs.

Another, much more common, cause of surprise is reasoned planning processes that considered an event too unlikely, too insignificant, or too difficult to prepare for. The West African Ebola epidemic (2013–16) was an unfortunate surprise, reflecting the explicit belief that Ebola would not affect West Africa, and that if there were Ebola outbreaks there, they would burn themselves out before they went to scale. Much was already known about Ebola; there had been numerous small outbreaks in other regions since Ebola’s first appearance in 1976 (World Health Organization, 2014), and even the initial response in 1976 was based on planning for the possible appearance of such emerging hemorrhagic diseases (Piot, 2012).

A third, similarly common, cause of surprise is responsible institutions that fail to make proper use of available evidence to make suitable preparations for possible events or even to consider their possibility despite evidence (Goble, 2018; Goble et al., 2017). The covid-19 pandemic was that sort of surprise. The possibility of pandemic flu and other diseases emerging from animal and bird viruses has long been recognized. However, pandemic preparedness offices were dormant or dismantled

when covid-19 emerged (Lewis, 2021), even though there had been no reasoned judgment behind this neglect.

Morell (2010) envisions a continuum of surprises for which some amount of evidence was already available. However, the distinction between reasoned choice and institutionalized neglect, our second and third causes, has management implications that are not exposed in his formulation. This is important because development's highly sectoral character, its tendency to focus on a narrow range of activities and potential outcomes, increases the likelihood that projects and interventions experience surprise stemming from the latter two reasons. The range of actors consulted in a particular planning effort is too often too narrow to fully grasp the actual likelihood of an uncertain event or outcome that may be influenced by broader aspects of the context. Instead, development planning processes often promote a project or activity that reflects the assumptions and values of particular development actors, limiting the attention given to management needs and possibilities of bad outcomes falling outside those assumptions and values. Unexpected good outcomes are also possible, and in the absence of flexibility in project design and implementation, there may not be resources or attention to take advantage of them.

These three possibilities for surprise, genuine surprises, reasoned choices, and institutional inadequacy or failure is shown in Table 1, which create different management challenges (Goble et al., 2017). Genuine surprises can only be prepared for by strengthening generic response capabilities: better observational capabilities and improved flexibility and adaptive capacity, including flexibility to make use of emerging opportunities. Once such a surprise has occurred, follow-up is essential, so that new knowledge and understandings are taken into account and broader implications of the event are considered. Reasoned choices, even when appropriate at the time they were made, can become obsolete: conditions might change, new knowledge might appear, and people's concerns may adjust. Addressing this possibility requires management capabilities for reassessing assumptions and choices. The possibility of institutional lapses places further demands on MEL vigilance and management. The organization(s) responsible for a project must maintain an awareness of their

Table 1. Sources of Surprise Outcomes in Development.

Source of Surprise	Description	Management Actions Needed
Genuine surprise	An event or challenge that could not have been anticipated with existing data and means of prediction.	Maintaining flexibility and general adaptive capabilities; improving observational capabilities. Follow-up to a surprise event: monitoring and learning from it.
Reasoned choices	Individuals or organizations decide based on existing data and knowledge that an event is too unlikely, too insignificant, or too difficult to prepare for.	Added to above: Regular reassessment of assumptions and choices, before and after a surprise event
Institutional inadequacy or failure	When individuals or organizations do not properly assess the likelihood of an event, or its possible impact, despite existing data and knowledge	Added to both: Ongoing assessment of the capabilities and willingness to participate of the organizations involved. Attention to the possibility that needed organizations have not been engaged. Attention to coordination among organizations Attention to incentives for making corrections Follow up that looks at institutional and organizational response

own capabilities and possible failings along with keeping track of the capability and willingness of other participants to prepare for and respond to a variety of contingencies; they must also maintain attention to whether the full range of needed organizations have been engaged and attention to how coordination among the organizations is working. This will require sustained efforts. Even when institutional failure is predictable or at least predictably a possibility, there may be incentives that make it difficult to acknowledge and thus prepare corrections. The nature of the follow-up to a case of institutional failure will determine how much learning is gained. Too narrow a focus on blame or exoneration may help perpetuate structural failings that could otherwise be corrected.

Imperfect and incomplete information and knowledge further compound surprises from each source, adding further challenges that are best addressed before the surprise might occur. Adaptive management is a key approach to coping with the problems posed by uncertainty, though it will not completely solve them. Vigilance of both types is essential to effective adaptive management, to provide advance knowledge that can help avoid bad outcomes and seize new opportunities. T1V is needed to address recognized possibilities. T2V is required for unrecognized possibilities that might produce surprises. Since T1V is directed toward recognized possibilities, the nature and domain of search can be clearly specified, and typical questions can be answered with deductive or inductive reasoning. That will not hold for T2V, which instead requires open-ended inquiry, a questioning spirit, and analysis that is neither deductive nor inductive, but rather abductive, the work of a detective trying to understand what is happening (Patton, 2011, chapter 9). A consideration of the three types of surprise does, however, suggest promising search domains for exercising T2V. There are three that seem particularly salient across the three types of surprise:

- **Observational oddities:** These can appear in two ways: surprising observations that are part of a planned collection of information—these might be categorized as “outliers”; other oddities or puzzles that were not part of the planned monitoring.
- **Possible violations of assumptions:** these also are of two sorts: explicit assumptions and implicit assumptions that were too obvious or too deeply hidden to be questioned.
- **Organizational misunderstandings or confusion:** potential clues are unexpected aspects of interactions within the project team or between the project team and various stakeholders, such as ease or difficulties in communication, trust or distrust, gaps or overlaps in responsibilities or unanticipated shifts in responsibility.

Dilemmas in Maintaining Effective Vigilance

Monitoring and evaluation provide the natural framework for preparations to be vigilant and for maintaining that vigilance within projects. However, there are many obstacles. Some difficulties are familiar and apply to vigilance of both types. To be effective, vigilance must be maintained over time. You never know when a surprise will occur. However, maintenance is difficult. Perseverance in attention is tiring for individuals; it is also tiring for institutions. Indicators of trouble may be uncertain and there may be resistance to “crying wolf.” Also, success over a period of time, manifest in the failure to observe anything untoward, is likely to breed complacency. Both tendencies, in turn, can lead to carelessness in watching for or interpreting warning signs. This phenomenon has been called “the atrophy of vigilance” (Freudenburg, 1992).

Institutional structures, practices, and incentives can cause further difficulties. Some of these are not easy to avoid. They result from competing objectives and are sufficiently deep-rooted to be called dilemmas: they are situations where policymakers and implementers will have to make choices among alternatives, each of which has undesirable as well as desirable aspects.

The nature of dilemmas is that they cannot be fully resolved. Acknowledging them, and acknowledging the difficulties posed by institutional pressures is a first step toward seeking an appropriate

Table 2. Four Dilemmas for T2V in Development.

Dilemmas for Type 2 Vigilance		
Dilemma	Description	Questions for practice
Dilemma Adapting vs Accountability	Description Balancing efforts on accountability and adaptive management in M&E	Questions for practice How do we gather information that informs adaptive management? How do we incorporate information gathering and interpretation to support learning?
Type 1 vs Type 2 Vigilance	Balancing Type 1 and Type 2 vigilance in M&E	How do we incorporate Type 2 vigilance into existing M&E frameworks and efforts?
Team morale vs questioning	Maintaining project team morale while promoting flexibility and a questioning spirit	How do we maintain confidence within the project while questioning its performance and assumptions?
Legitimacy and credibility vs questioning	Conveying project performance and accomplishments without abandoning Type 2 vigilance	How do we create a space for learning and change in the context of development practice predicated on certainty and averse to failure?

Abbreviation: M&E, Monitoring and Evaluation.

balance between the competing objectives. Four inter-related dilemmas are noteworthy in a quest to take a more balanced approach to vigilance in MEL (Table 2).

To facilitate learning and improve project outcomes, it is important to move beyond a vigilance that focuses on accountability to a vigilance that emphasizes adaptation and learning alongside accountability as is called for in contemporary guidance. This move, however, creates the first dilemma: the new objectives require a different integration of MEL with project design and operation than current and past practice. Such rethinking and redesign are likely to kindle institutional resistance. Institutional inertia is one source of resistance: its objective is protecting what has been learned from past experience: doing what has always been done often seems both more reliable and less trouble. Moreover, changes tend to be accompanied by new and unfamiliar costs: these may be resisted by contracting officers, since demands for financial accountability have extraordinary power in development organizations (Natsios, 2010).

Competing requirements for the two types of vigilance present a second dilemma: there is an asymmetry in the planning and implementation needed for T2V compared with T1V. Although both types of vigilance are needed to promote effective projects and outcomes, they require different institutional capabilities (Goble et al., 2018). T1V demands focus, a strong knowledge-based organizing framework, and clear and comprehensive procedures. In contrast, T2V requires defocusing, a questioning attitude that extends to the knowledge base, and an openness to alternative concepts. This contrast poses a dilemma for organizations that, in taking an adaptive approach, are already stressed by demands for flexibility. Administrative directives will emphasize close attention to warning signals and procedural compliance. However, while they are intended to avoid known risks and assure that plans are followed to secure positive outcomes, such directives often stifle a questioning spirit. On the other hand, too much openness in practice might dilute the close attention and care needed for rigorous T1V.

This second dilemma can be associated with two further dilemmas, one internal, the other external, that will trouble adaptive organizations in their programs and projects (Goble, Kasperon, & Ratick, 2017). The dilemmas are particularly acute in development settings in which implementing organizations must maintain their own coherence while navigating competing demands of donors, governments,

and various members of local communities (Mosse, 2011). The internal dilemma is how to maintain focus, coherence, and internal morale while persistently questioning assumptions and sharing responsibilities with other institutions (Turner & Pidgeon, 1997; Weick & Sutcliffe, 2007). “We understand how to do this” and “we have always done things this way” are powerful bonds within an institution. So too is the need to defend the institution against external skepticism and challenges to its budget and authority. But such bonding can discourage questioning and dissidence.

The external dilemma is how to maintain legitimacy, salience, and credibility in circumstances of high uncertainty, changing conditions, and divided responsibilities, along with external skepticism, donor reporting requirements that rely on conventional performance indicators, and competition for resources. Flexibility and waiting for more information can create an appearance of indecisiveness, reducing the confidence of project and program participants, whether donors, implementers, or community members. Acknowledging uncertainty may win points for honesty, but it may raise questions about competence and therefore threaten budgets and authority (Johnson & Slovic, 1995; White & Johnson, 2010). Further, careful MEL informed by both T1V and T2V may identify projects where some significant portion of the interventions does not work and a significant set of project goals are not achieved, but other interventions work in a sustained manner achieving other goals, or even goals that were not initially seen as the purview of the project. Are such situations failures or successes? Identifying how to speak about these situations, which are all-too-common in development practice, is critical for the maintenance of legitimacy and credibility.

Finally, the internal and external dilemmas can also reinforce each other. Public reassurances intended to maintain external trust may also encourage internal complacency.

These four dilemmas collectively pose a challenge to avoid confusion among competing objectives, a challenge to effective vigilance, and by extension a challenge to effective MEL efforts in development projects and activities. In the adaptive mode appropriate for project implementation, accountability must not override the acquisition of information needed to make project adjustments. In the broader adaptive spirit, learning must also have a prominent place in MEL design. More practical experience is needed to provide guidance for navigating between the competing demands of T1V and T2V, and for avoiding confusion among different MEL objectives. Pilots can provide such an experience and we discuss some possibilities next.

Piloting T2V in International Development Projects

Attention to vigilance in MEL is a question of practice. Building and exercising both T1V and T2V requires experience from which we can learn. A practical, productive means of gaining that experience is through pilot projects. Here, we recognize two types of pilots: formal pilots where MEL improvements are the goal of the exercise, and informal pilots where the issues raised in this article can be incorporated into existing, ongoing projects for the purposes of learning and gaining experience. Although the former offers opportunities for experimental controls associated with the general lessons that pilots often seek, the latter offers real-world implementation challenges that can test the appropriateness of the dilemmas and search domains described above and allow for the rapid refining of T2V approaches in practice.

Pilots are also useful in situations where institutional policies, practices, and/or incentives constrain the adoption of otherwise useful tools and guidance. At the most basic level, pilots can call attention to issues that are neglected or ignored, in this case T2V. However, pilots also serve as powerful vehicles for the delivery of proof-of-concept and institutionally legible evidence of the value that facilitates such adoption. Finally, pilots can demonstrate that the problems we have identified above, while challenging, are not intractable. By demonstrating that these problems can be addressed in a productive, reasonable manner, we hope to seed real projects in the world whose results will

build momentum behind changes in incentives across development donors that more closely align policy and practice in the arenas of adaptive management and learning.

Below, we broadly sketch contours for the pilots we recommend. Whether formal or informal, successful pilot efforts to build vigilance for MEL share goals and characteristics. We present broad guidance, in the form of key pilot goals, components, and MEL, that can be tailored to the particular situation of a given project.

Pilot Goals

1. *Acquire experience and learn:* To gain experience with the organizational and individual dynamics that shape the relative efficacy of T1V and T2V, pilots should take place in realistic (in formal pilots), and/or real (in informal pilots), operational situations. Pilots are aimed at addressing dilemmas around vigilance in M&E, particularly T2V. Table 2 provides the broad categories of question around these dilemmas, which will not be solved as much as productively approached and framed to facilitate future efforts.
2. *Facilitate the uptake of T2V and greater attention to vigilance overall:* To facilitate the uptake of MEL that incorporates T2V along with T1V, pilots must 1) demonstrate that T2V is implementable via reasonable processes that do not produce substantial additional staffing or budget barriers, 2) that such vigilance produces observations of unexpected events and outcomes, 3) that these observations have value for the management of the activity/project at hand and/or learning for similar projects, and 4) that the processes and tools associated with T2V can be institutionalized as a relatively consistent set of expectations amenable to standardized training across development organizations.
3. *Generate energy and excitement around vigilance in MEL:* The pilots should document trends, events, and outcomes that were identified through enhanced vigilance, demonstrate how what was learned through vigilance became actionable in the project context, and measure, whether qualitatively or quantitatively, the impact of any changes that were implemented on project outcomes. Such efforts will demonstrate the value and importance of vigilance to MEL, whatever the goal.

Key Components of the Pilots

The goal of the pilots is to further our capacity for vigilance across the three search domains laid out in section three above: identifying observational oddities, identifying violations of both explicit and implicit assumptions, and identifying organizational surprises or confusion. We look more closely at each of the three search domains in the following discussion.

Identifying and reporting oddities. Some approaches to complexity-sensitive MEL attempt a version of this effort through sentinel indicators, measures of changes in relationships or conditions that are likely to influence the outcome of the project. This is, indeed, an important first step. However, the identification of such indicators at project outset reflects a T1V mindset, as it presumes that we know what relationships are important, and what aspects of those relationships will reflect meaningful, project-relevant changes worthy of attention. Indeed, the establishment of sentinel indicators could suppress T2V by limiting the attention of project staff to a few key areas. In contrast, engaging T2V requires more abductive processes, noticing oddities and following up to ascertain if they are worthy of further attention. Because T2V opens observations to all aspects of a project, from its operations to its potential impacts, a wide range of project staff will be responsible for

observing and reporting on unexpected or unintended events and outcomes, not just those directly engaged in MEL. Although there are many existing methodologies that could support this, the critical question is how to make sure that type two vigilance is maintained while following any specific methodology. Although each project should build a reporting structure appropriate to its situation, projects should convene groups of staff and engage them in a series of questions that range from the observational (e.g., are there outliers in the population that might challenge project assumptions and compromise its outcomes?) to the critical (e.g., what is it about a particular observation that makes it seem “odd?”) to an assessment of the importance of the observation to project goals (e.g., are there many cases of a surprising outcome or behavior, or just one²?). Using the answers to these questions, observations can be categorized as requiring immediate attention, requiring more data and observation, or wait-and-see cases that currently seem to be of limited importance.

Identifying and reporting violations of assumptions. Identifying assumptions is closely linked to the identification and reporting of oddities, as these will often be the first signal of a problematic assumption. Specifically, violations of assumptions will become clear when project staff are asked critical questions about observed oddities, particularly why something appears odd. Answers to this question will reference both explicit assumptions (i.e. those in a project’s TOC) and implicit assumptions about how the world works and how the intervention or project in question was expected to intervene in the world. Challenges to both implicit and explicit assumptions can then be compared to those in the project design to identify situations where these assumptions fail to reflect the situation on the ground and therefore require modifications to project activities.

Identifying organizational misunderstandings or confusion. A growing literature in MEL brings the project and its organization into the lens of MEL to ensure that the project itself is not a source of a surprise (e.g., Arkesteijn et al., 2015). The identification of oddities and/or problematic assumptions presents the opportunity to detect aspects of organizational structure or function that can contribute to unexpected project outcomes. Misunderstandings or confusion may occur within a project management team; they could also occur in the relationships between project management and stakeholders. Responses to such situations may be constrained by project structures and budgetary or other limitations. Accordingly, two tasks arise in this domain:

1. *Identifying and reporting issues with project structure and function:* A subset of the project staff engaged in reporting on unexpected events and outcomes should be tasked with checking for connections between such observations and the structure and function of the project itself. For example, this team should examine if there is a clear party with responsibility for activities associated with a particularly unexpected outcome, or if this outcome has emerged in part because its causes suffer from ambiguity of ownership.
2. *Aligning reported issues with project structures:* One of the most substantial challenges pilots are likely to face is addressing observed oddities and issues in the context of an existing project undergoing implementation. Most interventions and the projects to which they belong have limited flexibility in their budgets or their goals, and therefore limited adaptive capacity in the face of signals that problems are appearing, or that opportunities are going unrealized. Project management will need to gather lessons about opportunities and barriers to response to inform future project design that might facilitate more effective use of Type 2 information.

A hypothetical illustration of Type 2 MEL at work. The staff of a hypothetical project in Sudanese West Africa that sought to improve agricultural outcomes in an agrarian community had been pleased with early outcomes of the project, particularly what appeared to be larger harvests of rain-fed grain.

Table 3. Broad Areas of Inquiry Related to the Search Domains for Pilots.

Search Domain	Broad Area of Inquiry
Observational Oddities	Did the pilot produce observations of unexpected or problematic outcomes and trends? Did the pilot develop a means of adjudicating the importance of different observations and what should be done about them?
Violations of Assumptions	Did the pilot produce observations of problematic implicit or explicit assumptions? Did the pilot develop a means of feeding information about violations of assumptions back to project activities?
Organizational Surprises or Confusion	Did the project produce observations of organizational actions or processes that might have caused surprise or negative outcomes in the project? Did the pilot produce changes in project decisions and activities?

However, toward the end of that first season of implementation, some staff noticed that domestic violence issues seemed to be more visible and frequent in the project area (*Identifying and reporting oddities*). The project leadership convened the staff to better understand how widespread these observations were. Project staff confirmed that there were more cases of domestic violence than in the past throughout the implementation area and explained that this seemed odd because a project assumption was that households should be more food secure, which would lead to better domestic relations (*Identifying and Reporting Violations of Assumptions*). Project leadership designated a small team of project staff to discern whether there was a causal connection between the project and increased domestic violence. As they spoke with key informants, the team realized that the project had been empowering women to increase their production of rain-fed grains, which threatened men's status within their households. As rain-fed production was generally seen as the domain of men in the project context, some of these men felt justified in using violence to discipline wives they felt were misbehaving by engaging in a man's activity and at least implicitly challenging their authority. This issue had gone unnoticed in project design because gender analysis had focused on ways to change women's activities, rather than understanding why women confined themselves to irrigated gardening in the first place (*Identifying organizational assumptions and Identifying and reporting issues with project structure and function*). After consulting with the donor institution, project leadership pivoted the project to focus more on boosting women's irrigated gardening output alongside work to improve men's rain-fed production (*Aligning reported issues with project structures*). This allowed women to benefit from the project without directly challenging widely accepted gender roles and responsibilities or threatening men. Overall food availability continued to rise in the project area, while the threat to women's safety and well-being was removed.

Evaluating the Pilot

Piloting an approach to M&E founded on T2V presents opportunities to learn about the process of such evaluation and the findings it produces. Although the evaluation of a particular pilot requires tailoring to the project it evaluated and the resources available, there are broad areas of inquiry related to the search domains that any pilot should address (Table 3).

Although the answers to each of the broad areas of inquiry will provide useful information that can broaden our use of vigilance in MEL, and thus improve ongoing project outcomes while informing improved project design in the future, one of the most important aspects of T2V is the approach to a project, process, or outcome with a questioning spirit. The objective of any evaluation of the pilot is not to determine the degree to which it achieved desired results, but to learn what worked and did not

work about the approaches used, the extent to which they were relevant and/or appropriate, and what should be considered for implementation beyond the pilot.

Conclusion

This paper seeks to contribute to improving international development practice in an era of increasing, and increasingly rapid, change and transformation. Development has long struggled with uncertainty; current trends, whether economic, environmental, or political, tend to intensify this challenge. The field has long understood that adaptation and learning are key approaches to dealing with uncertainty, and that effective MEL must provide the needed information and interpretation in a timely manner. However, this understanding is often not realized in practice. Much has been written on the ways in which institutional structures and incentives limit MEL effectiveness and therefore learning. Our focus was somewhat different: we focused our efforts on a particular aspect of MEL practice, the need for vigilance. Although we recognize that the structural and institutional questions around MEL persist, we argue that attention to this critical MEL function offers opportunities to address uncertainties and structural issues during project implementation. Specifically, the paper distinguishes two types of vigilance and observes that the second, T2V, is apt to be neglected and that, if suitably attended to, T2V clarifies the challenges of development under conditions of uncertainty. We presented a vision of MEL that privileges the identification of unexpected outcomes or impacts, opens them to an analysis by asking “what did we expect?” and “why did we expect that?,” seeks to understand the source of the unexpected, and offers a means of prioritizing observations and actions as they emerge over time.

At the same time, our focus on vigilance points the way to incremental steps toward change not just in MEL, but in development practice more broadly. Our focus on improving MEL practice seems timely in the context of recent guidelines from donors; these offer levers for change that could facilitate more attention to vigilance in practice. We acknowledge that there remain substantial institutional barriers to change and uncertainties in practice that preclude the establishment of a tidy new pathway for development practice. We suggest that small pilots, formal or informal, offer low-risk, high-reward opportunities to improve MEL vigilance; the result could lead to better project outcomes and also better understanding. Piloting such efforts will present significant opportunities to learn about the opportunities and limitations associated with this approach to MEL and open up the practice of development to wider questioning as we demand greater effectiveness from our efforts.

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ORCID iD

Rob Goble  <https://orcid.org/0000-0001-6571-5996>

Notes

1. Throughout this article, we use the shorthand “development” to stand in for international development.
2. Instances where there is only a single case of an observation, or where the deviation from expectations is minor, should not be ignored. Small deviations can propagate into significant opportunities or challenges over time. If, in subsequent meetings, the cases disappear or continue to be very few and/or represent very small deviations from expectations, they can be relegated to infrequent consideration.

References

- Arkesteijn, M., van Mierlo, B., & Leeuwis, C. (2015). The need for reflexive evaluation approaches in development cooperation. *Evaluation, 21*(1), 99–115.
- Carney, J. A. (1996). Converting the wetlands, engendering the environment: The intersection of gender with agrarian change in the Gambia. In R. Peet & M. Watts (Eds.), *Liberation ecologies: environment, development, social movements* (pp. 220–234). London: Routledge.
- Chaplowe, S., & Hejnowicz, A. (2021). Evaluating outside the box: Evaluation’s transformational potential. *Social Innovations, 5*(March), 1–16.
- Cram, F., & Hopson, R. (2020). Digging deeper to engage wicked problems through evaluation. In R. Hopson & F. Cram (Eds.), *Tackling wicked problems in Complex ecologies* (pp. 234–256). Stanford, CA: Stanford Business Books.
- Department for International Development (2013). *International development evaluation policy 2013*. London: Department for International Development.
- Department for International Development (2014). *DFID Evaluation strategy 2014 to 2019*. London: Department for International Development.
- Deutsche Gesellschaft für Internationale Zusammenarbeit (2013). *GIZ’s monitoring and evaluation policy*. Bonn: GIZ.
- Evaluation Gap Working Group (2006). When will we ever learn? Improving lives through impact evaluation. In *Report of the evaluation gap working group* (Issue May). Washington DC: Center for Global Development.
- Freudenburg, W. (1992). Nothing recedes like success—risk analysis and the organizational amplification of risks. *RISK: Health, Safety & Environment (1990–2002)*, 3(1), 1–35.
- Goble, R. (2018). The feasibility and value of adaptive strategies for extreme risks. In V. Bier (Ed.), *Risk in Extreme Environments: Preparing, Avoiding, Mitigating, and Managing* (pp. 92–108). New York: Routledge.
- Goble, R., Bier, V., & Renn, O. (2018). Two types of vigilance are essential to effective hazard management: maintaining both together is difficult. *Risk Analysis, 38*(9), 1795–1801.
- Goble, R., Kasperson, R. E., & Ratick, S. (2017). Coping with the unexpected. In R. E. Kasperson (Ed.), *Risk conundrums: solving unsolvable problems* (pp. 47–61). New York: Routledge.
- Hirschman, A. O. (1984). The on and off connection between political and economic progress. *The American Economic Review, 84*, 343–348.
- Hirschman, A. O. (1994). Social conflicts as pillars of democratic market society. *Political Theory, 22*(2), 203–218.
- Hirschman, A. O. (2014). *Development projects observed*. Washington, DC: Brookings Institution.
- Holling, C. S. (1978). *Adaptive environmental assessment and management*. Hoboken NJ: Wiley.
- Hummelbrunner, R., & Britt, H. (2014). *Synchronizing monitoring with the pace of change in complexity*. Washington, DC: USAID Discussion Note. USAID.
- Johnson, B., & Slovic, P. (1995). Presenting uncertainty in health risk assessment: Initial studies of its effects on risk perception and trust. *Risk Analysis, 15*(3), 485–494.

- Kasperson, R. (2008). Coping with deep uncertainty: Challenges for environmental assessment and decision-making. In G. Bammer & M. Smithson (Eds.), *Uncertainty and risk* (pp. 337–348). London and Sterling, VA: Earthscan.
- Lee, B., Sommerville, P., Farley, S., & Mayega, S. (2016). *SPACES MERL Systems and Complexity White Paper*. US Agency for International Development: Washington, DC, USA.
- Lewis, M. (2021). *The premonition: A pandemic story*. New York: W.W. Norton and Co.
- Li, T. M. (2005). Beyond “the state” and failed schemes. *American Anthropologist*, 107(3), 383–394.
- Mertens, D. M., & Boland, A. S. (2020). Complex ecology in international development evaluation, focusing on women and people with disabilities. In R. Hopson & F. Cram (Eds.), *Tackling wicked problems in complex ecologies* (Issue 2013, pp. 103–128). Stanford, CA: Stanford Business Books.
- Moore, D. S. (2000). The crucible of cultural politics: reworking “development” in Zimbabwe’s eastern highlands. *American Ethnologist*, 26(3), 654–689.
- Morell, J. A. (2010). *Evaluation in the face of uncertainty*. New York: Guilford Press.
- Mosse, D. (2011). *Adventures in aidland, An anthropology of professionals in international development*. New York: Berghahn Books.
- Natsios, A. (2010). *The clash of the counter-bureaucracy and development*. Washington, DC: Center for Global Development Essay. Center for Global Development.
- Patton, M. Q. (2011). *Developmental evaluation: Applying complexity concepts to enhance innovation and use*. New York: Guilford Press.
- Piot, P. (2012). *No time to lose: A life in pursuit of deadly viruses*. New York: W.W. Norton and Co.
- Pritchett, L. (2002). It pays to be ignorant: A simple political economy of rigorous program evaluation. *The Journal of Policy Reform*, 5(4), 251–269.
- Raimondo, E., Bamberger, M., & Vaessen, J. (2016). Introduction. In M. Bamberger, J. Vaessen, & E. Raimondo (Eds.), *Dealing with complexity in development evaluation* (pp. xxxv–xliv). Thousand Oaks, CA: Sage.
- Ramalingam, B. (2013). *Aid on the edge of chaos: rethinking international cooperation in a complex world*. Oxford, UK: Oxford University Press.
- Ramalingam, B., Laric, M., & Primrose, J. (2014). From best practice to best fit: Understanding and navigating wicked problems in international development. *ODI Working Paper*, 1–46. London: Overseas Development Institute.
- Schwandt, T. A. (2008). Educating for intelligent belief in evaluation. *American Journal of Evaluation*, 29(2), 139–150.
- Scott, J. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press.
- Taleb, N. N. (2007). *The black swan: The impact of the highly improbable*. New York: Random House.
- Turner, B., & Pidgeon, N. F. (1997). *Man-made disasters* (2nd Ed.). Oxford, UK: Butterworth-Heinemann.
- USAID (2016). *Evaluation: learning from experience: USAID evaluation policy*. Washington, DC: United States Agency for International Development.
- USAID (2018). *Complexity-Aware monitoring*. Washington, DC: United States Agency for International Development.
- Weick, K., & Sutcliffe, K. (2007). *Managing the unexpected: resilient performance in an Age of uncertainty* (2nd ed). Hoboken, NJ: Wiley.
- White, M. P., & Johnson, B. B. (2010). The intuitive detection theorist (IDT) model of trust in hazard managers. *Risk Analysis*, 30(8), 1196–1209.
- Williams, B. (2015). Prosaic or profound? The adoption of systems ideas by impact evaluation. *IDS Bulletin*, 46(1), 7–16.
- Williams, B., & Britt, H. (2014). *Systemic thinking for monitoring: attending to interrelationships, perspectives, and boundaries*.
- World Health Organization (2014). *Ebola and marburg virus disease epidemics : Preparedness, alert, control, and evaluation*. Geneva: World Health Organization.