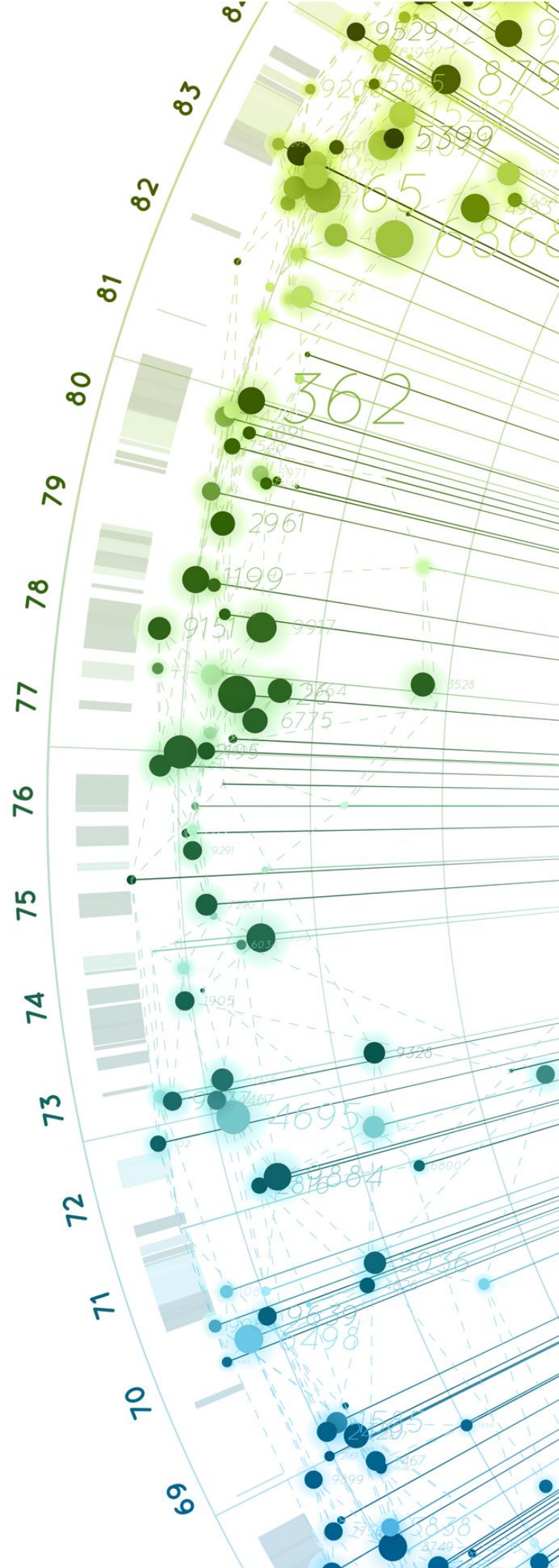


Principles for Effective Use of Systems Thinking in Evaluation

Systems in Evaluation TIG

A Topical Interest Group of the American Evaluation Association

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FOREWORD

The Systems in Evaluation Topical Interest Group (SETIG) of the American Evaluation Association (AEA) has developed a set of principles to guide the use of four core systems concepts in the design and implementation of an evaluation. The primary purpose of these principles is to support evaluators and evaluation stakeholders in the use of systems concepts in evaluation.

These principles are the result of a multi-year dialogue among SETIG members about the practice of systems-informed evaluation. SETIG members are committed to cultivating this dialogue and deepening our understanding through study, practice, and reflection. The SETIG may refine the current version of the principles to reflect new knowledge and experience. The principles will play an important role in core SETIG activities such as communications, education, and conference proposal review as appropriate. For example, the principles can be used to explain concepts central to systems in evaluation, and to provide a starting point for those new to systems who want to learn more about how to use them in evaluation.

The principles were developed through a collaborative process led by the SETIG Leadership Team and the Principles Project Coordinating Team (Meg Hargreaves, Jan Noga, and Emily Gates) that engaged the entire TIG membership to provide input and a dedicated team of volunteers to create this document.

Many thanks to the team of volunteers who helped produce these principles (in alphabetical order):

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Thanks also to the SETIG Leadership Team for coordinating the process:

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HOW TO READ THIS DOCUMENT

The primary purpose of this document is to support evaluators and evaluation stakeholders in the use of systems concepts in evaluation. The principles are the heart of this document. Each principle is further explained in a section that outlines operating principles, guidance on what not to do, and helpful references.

[This document is developmental.](#)

It represents the collective efforts of a specific group of people at a specific moment in time. The foreword introduces the group, and the preamble describes the dialogue that inspired this document, the history that informed it, and ideas for future development of the principles. Read this document and join the conversation.

[This document is practical.](#)

The principles provide guidance for evaluators and evaluation stakeholders for designing and implementing evaluations with a systems lens. The principles are not a recipe and this document is not a methodological brief. Read this document to enrich your practice.

[This document is grounded in the literature and intended to inspire further study.](#)

It embraces the breadth and diversity of both systems and evaluation but does not aspire to a comprehensive overview of either field or their multiple intersections. This document is not a treatise or a journal article. Read this document to learn more about the exciting ongoing exchanges between evaluation and systems.

PREAMBLE

The primary purpose of these principles is to support evaluators and evaluation stakeholders in the use of systems concepts in evaluation. This preamble provides some high-level definitions and general guidance to inform the use of these principles in evaluation.

The SETIG has elected to use systems concepts to develop principles of systems-informed evaluation. However, it recognizes that other paths may also be used for that purpose, including: identifying the core activities of designing and conducting an evaluation and then identifying principles for taking a systems approach to each activity; identifying a particular systems approach or theory (e.g., system dynamics, agent-based modeling, human system dynamics, complexity theory, critical systems heuristics) (see Capra & Luisi, 2014; Williams & Hummelbrunner, 2011; and Reynolds & Holwell, 2010 for systems approaches) and developing principles for how it informs evaluation; and studying empirical examples of systems-informed evaluation to identify principles.

Systems concepts are those that have come to define the systems field, an expansive and cross-disciplinary area of inquiry including numerous subfields such as cybernetics, complexity theory, and systems science (Hieronymi, 2013). Since systems concepts are those that focus on conceptualizing systems, it is worth defining what we mean by a system. There is no single, agreed-on definition of system in the systems field. Looking across the field, the term “system” typically refers to a set of interrelated elements that interact to achieve an inherent or ascribed purpose (Ackoff, 1971; Meadows, 2008). Systems can be conceived as ontological realities existing out-there in the world or as epistemological constructs used to understand the world (Reynolds, 2008). Most situations involve multiple and intertwined systems. For practical purposes, it may be helpful to consider one system at a time. References to “the” system in this document do not imply that only one system is relevant to a situation or to an evaluation.

Systems thinking, in the evaluation field, often refers to a way of thinking based on core systems concepts. To date, three distinct orientations to systems thinking have informed SETIG discussions on the use of systems concepts in evaluation. One orientation draws from historical review and identifies interrelationships, perspectives, and boundaries as core concepts of focus present in much of system theory (Williams and Imam, 2007). A second orientation draws from the field of cognitive science to identify processes for thinking that focus on distinctions, relationships, perspectives, and boundaries (Cabrera and Cabrera, 2015). The third orientation draws on human systems dynamics theory and focuses on concepts of containers, differences, and exchanges (Eoyang, 2007). Common across the three orientations is the use of specific systems concepts to think about a particular situation, system, problem, intervention, or evaluation.

“Taking a systems approach” generally refers to using systems concepts or methods. Methods such as system dynamics, social network analysis, soft systems methodology, and critical systems heuristics are especially associated with the systems field, however, the application of systems concepts to evaluation is not limited to these methods.

Several considerations are important to keep in mind about the principles described in this document for effective use of systems thinking in evaluation:

First, the principles were developed based on four core systems concepts - interrelationships, perspectives, boundaries, and dynamics.

The interrelationships between elements of a system; perspectives from which a situation or system can be understood; boundaries between the system and its environment; and the dynamics that influence and are influenced by the behavior of the system or situation over time and at different scales. With a history that extends over a century and origins in multiple disciplines including the natural and social sciences, the systems field offers many systems concepts that can be applied to evaluation theory and practice. The SETIG drew primarily on the three orientations to systems thinking when identifying these four concepts as particularly relevant and useful for evaluation.

Second, the systems field is highly diverse and constantly evolving.

As a consequence, key concepts do not have agreed upon definitions (Reynolds & Holwell, 2010; Ison, 2010). The principles presented here will inevitably be interpreted differently when understood using different definitions of the core concepts.

Third, the principles are intended to be used in ways that acknowledge both ontological and epistemological meanings of systems concepts.

Within the systems field and among evaluators using systems concepts, there can be a tension between what can loosely be called epistemological versus ontological uses of systems concepts. This tension came about within the historical developments of the systems field (see Midgley, 2007 for overview) as different systems traditions emphasized systems (and associated concepts) as out-there realities in the world that could be observed and empirically examined versus social and epistemological constructs for understanding the world.

Fourth, the principles are intended to work together in an iterative and dynamic process.

While these four principles and the subsequent operating principles are discussed here separately, they are intended to be used together in a mutually influential way. The use of one principle will in turn affect the use of the other principles, which will in turn affect that initial principle. “Systemic triangulation” is one inspiration for the interactive application of the principles. (Ulrich, 2017)

Fifth, principles are intended to apply throughout an evaluation and are not limited to any single point in an evaluation process.

Conceptualizing, designing and conducting evaluations include a range of iterative activities including, but not limited to, managing the evaluation; defining what is to be evaluated; determining

the key evaluation questions; framing the boundaries for an evaluation; describing activities, outcomes, impacts, and context; understanding causes of outcomes and impacts; gathering and managing data; synthesizing data from one or more evaluations; and reporting and supporting use of findings (BetterEvaluation's Rainbow Framework). The principles are intended to be used throughout the entire evaluation process, and therefore should be used to think through and carry out any one or more of these activities.

Equally importantly, the principles apply to monitoring. Monitoring and evaluation are closely related. For example, evaluations often rely on monitoring data. Monitoring and evaluation often work together in an integrated system to provide useful information over the life of an intervention. Applying systems concepts in monitoring furthers the effective practice of system-informed evaluation (Britt, 2013; Williams & Britt, 2014).

Finally, principles apply to both the intervention being evaluated and the evaluation itself.

It will perhaps be most common for evaluators and stakeholders to use these principles to examine the policy, program, or initiative being evaluated and the broader need, problem, or situation it addresses. Additionally, they can be used to reflect on, discuss, and make changes to the evaluation itself.

THE GUIDE FRAMEWORK

The principles were developed using the GUIDE Framework which outlines five criteria for a high-quality principle: 1) guiding, 2) useful, 3) inspiring, 4) developmental, and 4) evaluable (Patton, p. 43). Please see Appendix 1 for a description on how the Systems in Evaluation principles meet the five criteria.

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SUMMARY OF PRINCIPLES FOR EFFECTIVE USE OF SYSTEMS THINKING IN EVALUATION

SYSTEMS-IN-EVALUATION PRINCIPLE

View the evaluation situation through the lens of systems thinking.

Operating Principle S1: Throughout the evaluation process, critically deliberate on and apply the principles of interrelationships, perspectives, boundaries, and dynamics in integrated ways.

Operating Principle S2: Understand and describe the relationship between the various concepts, methods, and tools which inform the evaluation.

Operating Principle S3: Ensure that key evaluation documents (plans, reports, messages) identify and describe the systems thinking concepts, conceptual frameworks, methods, and tools which inform the evaluation.

INTERRELATIONSHIPS PRINCIPLE

Critically deliberate on, work to examine, understand and to appropriately address interrelationships regarding both the evaluand and the evaluation itself.

Operating Principle I1: Identify, capture, map, and track key interrelationships that influence, could influence, and/or should influence the evaluand and the evaluation itself.

Operating Principle I2: Identify key interrelationships that result from, could result from, and/or should result from the evaluand and the evaluation itself.

Operating Principle I3: Consider alternative interrelationships within and beyond the boundaries of the system as currently defined, along with potential consequences of including them in the evaluation.

Operating Principle I4: Make transparent and support interrelationships that positively influence or are positive results from the evaluation while remaining open to revision.

PERSPECTIVES PRINCIPLE

Capture, critically deliberate on, work to understand, represent, and appropriately address diverse perspectives.

Operating Principle P1: Identify and represent diverse perspectives and the values on which they are based. Seek dissent as well as consensus.

Operating Principle P2: Attend to the types of power associated with each perspective and consider the consequences.

BOUNDARIES PRINCIPLE

Critically deliberate on, set, and explain the boundaries and boundary decisions that relate to the situation being evaluated and the evaluation itself.

Operating Principle B1: Identify key boundaries that influence, and should influence, the situation being evaluated and the evaluation itself.

Operating Principle B2: Deliberate on a range of critical boundary choices along with potential consequences.

Operating Principle B3: Make transparent and justify the boundaries used in an intervention and the evaluation while remaining open to revision.

DYNAMICS PRINCIPLE

Focus on the patterns of change that emerge within the system to understand their influence and significance for the evaluation.

Operating Principle D1: Consider how dynamics related to time, location, anticipated and unanticipated reactions, and current states and rates of change interact to create patterns that are nonlinear and multi-directional to help understand how dynamics shape the systems relevant to the evaluation.

Operating Principle D2: Design an evaluation plan that is responsive to emergent developments; collects information about what, when, how, and why change occurs; and incorporates learning as it is received to document and respond to dynamics in the evaluation.

Operating Principle D3: Investigate how observers' worldviews and their judgements about useful and convenient representations of system behavior influence the conceptualizations of dynamics.

Operating Principle D4: Consider the interactions and influence of the evaluator and evaluation with and within systems relevant to the evaluation to document the role of evaluation in shaping system behavior.

SYSTEMS-IN-EVALUATION PRINCIPLE

View the evaluation situation through the lens of systems thinking.

OPERATING PRINCIPLES

Operating Principle 1:

Throughout the evaluation process, critically deliberate on and apply the principles of interrelationships, perspectives, boundaries, and dynamics in integrated ways.

Operating Principle 2:

Understand and describe the relationship between the various concepts, methods, and tools which inform the evaluation.

Operating Principle 3:

Ensure that key evaluation documents (plans, reports, messages) identify and describe the systems thinking concepts, conceptual frameworks, methods, and tools which inform the evaluation.

GUIDANCE ON WHAT NOT TO DO

Do not use the principles (interrelationships, perspectives, boundaries and dynamics) in isolation from one another.

Do not assume that all systems definitions, concepts, principles, methods, and tools are compatible and consistent with one another.

Do not assume that the relationship between systems concepts, definitions, principles, methods, and tools is self-evident. In reporting, do not simply list the systems concepts, definitions, principles, methods, and tools which informed the evaluation.

Do not rely on methods and tools alone to inform an evaluation. There is general agreement among those using systems thinking in evaluation that systems methods and tools alone (such as a system map or frameworks) are not sufficient for informing an evaluation. Ideally, core systems concepts should be integrated throughout the evaluation.

DISCUSSION

To apply the “overarching” systems-in-evaluation principle means to systemically apply the four constituent principles – interrelationships, perspectives, boundaries and dynamics. The four constituent

principles inform one another in essential ways. No one principle is complete without the others. Together, they form a system for guiding the systemic practice of evaluation.

These four core concepts manifest themselves in each situation in unique, interdependent, and continually evolving ways. Because the systems thinking field is broad and diverse, concepts, methods, and tools selected to inform an evaluation may align closely with each other, complement one another, or exist in creative tension with one another. It is important to explain how the complementarity or contradictions between these concepts influence the evaluation.

The systems-in-evaluation principles inspire evaluators to contribute to responsible and meaningful change in people's lives. "Seeing" the systems we live in equips us to act in deliberate and intentional ways. Using a systems thinking lens, we become more aware of the consequences of our actions and those of others, as well as the possibilities and limitations of actions within and among specific systems. Consequently, we are better equipped to undertake evaluation as a co-creative process.

PROMPTING QUESTIONS: ARE WE USING THE PRINCIPLES IN AN INTEGRATED WAY?

The following questions may be useful for considering the ways these principles work together.

- What new interrelationships become relevant when I alter the size or nature of the boundaries of my system, modify my perspectives, or accommodate the perspectives of other stakeholders, or observe new or altered dynamics within the situation?
- How are my perspectives influenced or transformed when I alter my boundary decisions and/or observe new interrelationships and/or observe new or altered dynamics within the situation?
- What boundary choices are affected when I observe new interrelationships and/or accommodate perspectives of different stakeholder groups and/or observe new or altered dynamics within the situation?
- How is my assessment of the dynamics of a situation affected when I alter the size or nature of the boundaries of my system and/or modify my perspectives or accommodate the perspectives of other stakeholders and/or observe new interrelationships?

INTERRELATIONSHIPS PRINCIPLE

Critically deliberate on, work to examine, understand and to appropriately address interrelationships regarding both the evaluand and the evaluation itself.

OPERATING PRINCIPLES

Operating Principle I1:

Identify, capture, map, and track key interrelationships that influence, could influence, and/or should influence the evaluand and the evaluation itself.

Operating Principle I2:

Identify key interrelationships that result from, could result from, and/or should result from the evaluand and the evaluation itself.

Operating Principle I3:

Consider alternative interrelationships within and beyond the boundaries of the system as currently defined, along with potential consequences of including them in the evaluation.

Operating Principle I4:

Make transparent and support interrelationships that positively influence or are positive results from the evaluation while remaining open to revision.

GUIDANCE ON WHAT NOT TO DO

- Do not underestimate the role or influence of interrelationships on the evaluand and in the evaluation.
- Do not think that interrelationships are something new or additional or optional.
- Do not assume that interrelationships in an evaluation or the situation being evaluated are given, universal, or static.
- Do not assume that there are “right” or “wrong” interrelationships.

DISCUSSION

Interrelationships constitute the earliest concept of interest to the systems field (Williams & Britt, 2014). Interrelationships are ways in which each of two or more things relate or connect to each other and produce an effect. They delineate the physical, temporal, political, social, cultural, ideological, technical, and ethical linkages associated with an evaluand and its evaluation. Interrelationships are constructions which depend on the perspective(s) taken and the information under consideration. Interrelationships can be dynamic, evolving with an evaluand and its evaluation.

The purpose of the interrelationships principle is to generate awareness about the larger system in which the evaluand and the evaluation exist. The interrelationships principle undergirds learning about cause-and-effect relationships and the theories of change which inform the design and implementation of social programming.

The interrelationship principle applies during all phases and in all aspects of the evaluation.

The principle underscores evaluation's role in:

1. Capturing the key interrelations at work in a situation
2. Describing and measuring those interrelationships
3. Ensuring that the conceptual models of interrelationships match the changing dynamics of the situation. Understanding interrelationships may be particularly helpful during the design phase of a program or initiative to ensure that the inputs and activities are well aligned to intended outputs and outcomes.

The interrelationships principle inspires evaluators to think critically about the ethics of their engagement with an evaluand and its evaluation. Interrelationships, and the way they are represented, have consequences for both the system and the evaluation¹. Evaluators inevitably influence interrelationships. For instance, every time evaluators use a criterion to judge an intervention, every time evaluators choose ways of measuring, and every time evaluators choose intended uses for intended users, they effect the interrelationships of a situation. Systemic evaluators take responsibility for their influence and consider whether they should mitigate any potential or actual consequences. Careful consideration and representation of interrelationships is essential to ethical evaluation practice while also keeping in mind that there are no “right” answers.

¹ Readers may wish to consult AEA's statement on cultural competency as well as the growing body of work on culturally responsive evaluation. American Evaluation Association (2011). Public Statement on Cultural Competence in Evaluation. Washington DC: Author. (<http://www.eval.org/p/cm/ld/fid=92>)

Application of the interrelationships principle can be evaluated by iteratively designing, implementing, and testing theories of change. Evaluation can assess whether identified interrelationships were thoroughly captured, deliberated on, understood, and addressed. Because interrelationships are complex and dynamic, exhaustive accounting of them may not be possible within the scope of the evaluation. Frequent reflection, dialogue, and revision of documentation about the interrelationships will enhance the understanding about their roles vis-à-vis the evaluand and the evaluation.

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DRAFT

PERSPECTIVES PRINCIPLE

Capture, critically deliberate on, work to understand, represent, and appropriately address diverse perspectives.

OPERATING PRINCIPLES

Operating Principle P1:

Identify and represent diverse perspectives and the values on which they are based. Seek dissent as well as consensus.

Operating Principle P2:

Attend to the types of power associated with each perspective and consider the consequences.¥

GUIDANCE ON WHAT NOT TO DO

- Do not ignore the implications of diverse perspectives for an evaluation.
- Do not assume that there is a single relevant perspective, or that your perspective is universal.
- Do not assume individuals have a single perspective.
- Do not assume that those that share characteristics or roles also share similar perspectives.

DISCUSSION

Perspectives began to enrich the systems discourse in the 1970s by humanizing the members of systems and by opening the goals and objectives of systems to critique (Midgley, 2007). The consideration of perspectives gave rise to participatory systems approaches which attempt to uncover and include diverse perspectives and broaden those conducting analytical work beyond narrowly defined “experts.” The perspectives concept prompted a shift in understanding systems as tangible entities to understanding them as mental models.

An individual’s perspective encompasses how they see, understand, value, and are motivated to act in a situation (Williams & Britt, 2014). An individual’s perspective is not an opinion; rather, it represents the understanding which undergirds an opinion. Every perspective implies a specific relationship to the system. Every perspective draws the boundaries of the system in a specific way.

It is also possible that individuals may share a similar perspective on a situation. A framing represents an understanding of the situation that is shared by two or more individuals.

The perspectives principle prescribes learning about and taking appropriate action to deal with diverse perspectives throughout an evaluation. The purpose of the perspectives principle is to provide an accurate description of how to interpret the evaluation by pointing to the specific perspectives it represents and the perspectives that might have been left out or privileged. The quality of evaluation practice may be enhanced by including multiple perspectives.

The perspectives principles values diverse perspectives – that is, the different ways that individuals see, understand, value, and are motivated to act in a situation. Valuing perspectives is both an ethical and pragmatic stance. It implies that evaluation should acknowledge the multiplicity of perspectives on a situation and evaluand and that each perspective implies a specific relationship to the system. Ideally, an evaluation should include multiple perspectives. Evaluations that include multiple perspectives may represent more nuanced representations of complex challenges.

Application of the perspectives principle can be evaluated by conducting an analysis of stakeholder and stakes in the evaluation and situation, and assessing whether these perspectives were captured, critically deliberated on, represented, and appropriately addressed. This stakeholder analysis should include individuals and groups who have different relationships to what is being evaluated, such as intended beneficiaries, allies, opponents, those excluded, and affected and influential bystanders.

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BOUNDARIES PRINCIPLE

Critically deliberate on, set, and explain the boundaries and boundary decisions that relate to the situation being evaluated and the evaluation itself.

OPERATING PRINCIPLES

Operating Principle B1:

Identify key boundaries that influence and should influence the situation being evaluated and the evaluation itself.

Operating Principle B2:

Deliberate on a range of critical boundary choices along with potential consequences.

Operating Principle B3:

Make transparent and justify the boundaries used in an intervention and the evaluation while remaining open to revision.

GUIDANCE ON WHAT NOT TO DO

- Do not think that boundary choices are something new, additional, or optional.
- Do not assume that the boundaries used in an evaluation or the situation being evaluated are given, universal, or static.
- Do not assume that there are “right” boundaries.

DISCUSSION

It is not possible to evaluate everything about an intervention or situation. Boundaries delineate what is and/or should be ‘in’ and ‘out’ of an evaluation’s focus. Choices must be made about what aspects of the intervention or situation ought to be evaluated. Choices must be made about how an evaluation should assess an intervention or situation. Furthermore, choices must be made about the nature of the evaluation activity itself. These boundary choices delineate the physical, temporal, political, social, cultural, ideological, technical, and ethical spaces occupied by the evaluation and the situation being evaluated. Boundaries are social and cognitive constructions; they depend on the perspective(s) taken; and boundaries may change as more information and perspectives are considered.

Boundary choices are made throughout the evaluation process regardless of evaluation purpose, model, intervention type (e.g., change initiative, policy, program) or point in the program cycle (e.g., needs assessment, design, implementation, closeout). Examples of boundary choices in evaluation include, but are not limited to: defining the evaluand and key terms; defining the scope and focus of the evaluation; framing questions; determining the methodologies, methods, techniques, and measurement systems; selecting analytic approaches; developing a sample frame; selecting members of an evaluation advisory group; and drafting a dissemination plan. Boundary choices determine who ought to be involved in the design, implementation, and results of an evaluation. They influence the use, usefulness, and consequences of an evaluation.

Evaluators also make boundary decisions related to the other systems thinking concepts – interrelationships (e.g., who is in and who is out?), perspectives (e.g., whose perspectives are considered?), and dynamics (e.g., which dynamics are relevant to this evaluation?).

The purpose of the boundary principle is to help evaluators and others working with evaluators be intentional, clear, and transparent about boundary choices involved in planning and conducting the evaluation. The boundary principle prescribes identifying boundary decisions and identifying options, choices made, and the implications of choices throughout the evaluation process. The principle values transparency and responsibility for boundary choices and potential consequences. It implies that evaluation should not be done unreflectively or covertly.

The boundary principle inspires evaluators to recognize the consequences of boundary choices and make those choices in an ethical manner. Boundaries inevitably influence who or what is included, excluded, and marginalized in a situation and in an evaluation. Applying this principle is a matter of professional ethics, however, it is not possible to perfectly apply this principle. Evaluators who apply the boundary principle do not aspire to a single, all-encompassing Truth with a capital “T.” Instead they aspire to be transparent about which evidence and values are considered relevant to the evaluation process and conclusions. The desired result is an evaluation that clearly identifies its strengths and limitations and is carried out with thoughtful attention to and mitigation of potential negative consequences.

Application of the boundary principle can be evaluated by reviewing evaluation products for identification and explanation of boundary choices and evidence of consideration of alternatives, rationale of choices made, and consideration of consequences. Evaluation criteria identify and delineate boundaries. Evaluations are largely based on judgments made against these criteria. Since criteria or at least the judgments ought to be explicit, their worth can be easily assessed.

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Dynamics Principle: Focus on the patterns of change that emerge within the system to understand their influence and significance for the evaluation.

DRAFT

DYNAMICS PRINCIPLE

Focus on the patterns of change that emerge within the system to understand their influence and significance for the evaluation.

Operating Principle D1:

Consider how dynamics related to time, location, anticipated and unanticipated reactions, and current states and rates of change interact to create patterns that are nonlinear and multi-directional to help understand how dynamics shape the systems relevant to the evaluation.

Operating Principle D2:

Design an evaluation plan that is responsive to emergent developments; collects information about what, when, how, and why change occurs; and incorporates learning as it is received to document and respond to dynamics in the evaluation.

Operating Principle D3:

Investigate how observers' worldviews and their judgements about useful and convenient representations of system behavior influence the conceptualizations of dynamics.

Operating Principle D4:

Consider the interactions and influence of the evaluator and evaluation with and within systems relevant to the evaluation to document the role of evaluation in shaping system behavior.

GUIDANCE ON WHAT NOT TO DO

Do not ignore or fail to illuminate the effects of the dynamics operating within and around the system by looking only at the evaluand and not the context surrounding it.

Do not fail to consider multiple types of dynamic complexity present in the systems relevant to the evaluation, including the degree of change at different timescales, feedback loops, emergence, nonlinearity, historical dependence, self-organization, coevolution, and adaptivity.

DISCUSSION

'Dynamics' refers to the emergent and changing interactions between and among the parts and agents within system(s) (Eoyang and Holladay, 2013). Bringing attention to dynamics in our systems approach focuses us first on how a phenomenon changes over time, identifying the patterns of change that may

be recurrent, constant, or in an ongoing state of evolution. Second, it means using the evaluation to bring understanding to how these patterns are generated by the many, multidirectional interactions among units (i.e., organizations, social groups, individuals, even individual behavior traits or perspectives, etc.), the parts of the system, and the larger environment.

Paying attention to dynamics involves acknowledging the history of the patterns active in a system and incorporating a longer-term perspective often absent in evaluations (Meadows 2008, p. 170). Paying attention to dynamics also involves acknowledging that the presence of an evaluator influences the dynamics. Our evaluation approach should be responsive to the complex ever-changing environment in which we are operating. Complex systems dynamics often give rise to unpredictable, counter-intuitive outcomes (Forrester, 1995). The dynamics principle encourages us to be in a constant state of inquiry, to learn as we go, and to keep adapting our evaluation design in response (Forss, Marra, and Schwartz, 2011, p. 331).

The purpose of the dynamics principle is to provide evaluators with a lens through which to consider and capture the interactions of context, stakeholder views, time, place, and other elements that may be relevant in the evaluation. Paying attention to dynamics supports more holistic decision-making in planning and implementing the evaluation and can provide better evaluation results. The dynamics principle encourages evaluators to consider simple, complicated and complex patterns of change, including the effect of context, stakeholder views, time, place, and other elements that interact and may affect results during the course of the evaluation (Glouberman and Zimmerman, 2002). The dynamics principle encourages evaluators to be responsive to change, including the way that we (as evaluators) change and impact the evaluation and how the evaluation acts as an intervention within the broader system. Evaluators should continuously consider and respond to the complex ever-changing environment in which we operate.

Application of the dynamics principle can be evaluated through consultations with stakeholders to ensure that the evaluation has captured the various types of dynamics at work in the systems relevant to the evaluation. Evaluation of this principle should include dynamics across time, feedback loops, emergence, nonlinearity, historical dependence, coevolution, self-organization, and adaptivity (Patton, 2011, pp. 150-151).

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FUTURE DIRECTIONS

During the process of developing these principles, SETIG members suggested several areas for future exploration. A few are noted below.

TEST THE PRINCIPLES

The principles are meant to be applied. The SETIG encourages its members to use the principles for planning and guiding evaluations and assessing evaluation products, such as reports. The SETIG encourages members to reflect on their experience of using the principles and contribute observations, questions, lessons learned, and new areas for exploration to the ongoing dialogue on strengthening systems informed evaluation.

EXCAVATE ASSUMPTIONS UNDERLYING THE PRINCIPLES

The principles unavoidably rest on the authors' assumptions about the nature of social programming, how knowledge is constructed and used, and the practice of evaluation (Shadish et al, 1991, p. 35). For example, several operating principles may suggest that an evaluator observe system behavior over an extended time period. SETIG members may find it useful to identify and examine the assumptions underlying the principles, especially as the principles are tested through application.

DEVELOP A GLOSSARY

This document describes, rather than defines, the core concepts that serve as the principles' foundation. Some reviewers have suggested that definitions of these and other key terms would enhance the usefulness of the document. Others underscore the point, stated in the preamble, that systems concepts do not have agreed upon definitions (Reynolds & Holwell, 2010; Ison, 2010). SETIG members may wish to revisit this issue after further study and discussion.

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APPENDIX 1: THE GUIDE FRAMEWORK

The Systems in Evaluation principles were developed using the GUIDE Framework which outlines five criteria for a high-quality principle: 1) guiding, 2) useful, 3) inspiring, 4) developmental, and 4) evaluable (Patton, p. 43). The table below describes each criterion and how the Systems in Evaluation principles meet them.

Criterion	Definition and the Systems In Evaluation Principles Meet This Criterion by ...
GUIDING	<p>Definition: A principle is prescriptive. It provides advice and guidance on what to do, how to think, what to value, and how to act to be effective. It offers direction. The wording is imperative: Do this...to be effective. The guidance is sufficiently distinct that it can be distinguished from contrary or alternative guidance.</p> <p>Meets this criterion by: Providing clear operating principles and guidance on what not to do.</p>
USEFUL	<p>Definition: A high-quality principle is useful in making choices and decisions. Its utility resides in being actionable, interpretable, feasible, and pointing the way toward desired results for any relevant situation.</p> <p>Meets this criterion by: Providing plain language guidance useful for the practice of evaluation.</p>
INSPIRATIONAL	<p>Definition: Principles are values-based, incorporating, and expressing ethical premises, which is what makes them meaningful. They articulate what matters, both in how to proceed and the desired result.</p> <p>Meets this criterion by: Inspiring evaluators to conduct evaluations to contribute to responsible and meaningful change in people’s lives. The principles make explicit the ethical premises underlying the choices made in evaluation.</p>
DEVELOPMENTAL	<p>Definition: The developmental nature of a high-quality principle refers to its adaptability and applicability to diverse contexts and over time. A principle is thus both context sensitive and adaptable to real-world dynamics, providing a way to navigate the turbulence of complexity and uncertainty. In being applicable over time, it is enduring (not time-bound), in support of ongoing development and adaptation in an ever-changing world.</p> <p>Meets this criterion by: Providing guidance for any situation in which evaluation is conducted and exhorting evaluators to continuously consider and respond to the complex ever-changing environment in which we operate. The principles apply across various boundaries including, but not limited to, geographical, social, economic, programmatic, and jurisdictional boundaries. They apply to an intervention, change initiative, policy, or program develops and throughout its</p>

	implementation. They provide guidance for any number of intended uses, and applies to different purposes for evaluation (accountability, program improvement, strategy analysis, overall summative judgments of merit and worth, monitoring, or knowledge-generation).
EVALUABLE	<p>Definition: A high-quality principle must be evaluable. This means it is possible to document and judge whether it is actually being followed, and document and judge what results from following the principle. It is possible to determine whether following the principle takes you where you want to go.</p> <p>Meets this criterion by: Providing suggestions for how to evaluate the four constituent principles.</p>

Patton, M. Q. (2018). Principles-Focused Evaluation: The GUIDE. New York: Guilford Press.

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