
Transforming Evaluative Thinking: Some Ideas from Bateson

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Background: Evaluators increasingly consider systems- and complexity-informed approaches to evaluation, especially when considering how evaluation might be transformed to evaluate current complex problems. Although Gregory Bateson was an early contributor to systems thinking, there is almost no reference to his work in the evaluation literature.

Purpose: To introduce some of Bateson's core ideas and to pose initial questions intended to spark reflection and discussion, with the intent of contributing to further development of the concept of evaluative thinking.

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As the need to address the alarming state of the world becomes ever more urgent (Ripple et al., 2022, 2023; UNEP, 2022), evaluators are called to consider our roles in creating (and evaluating) positive change toward an equitable, just, and sustainable future (Parsons et al., 2020). We must transform our ideas of evaluation if they are to be applied to complex and transformative systems change (Patton, 2020). More fundamentally, we must revisit our own values (Patton, 2021) and epistemologies (Billman, 2022, 2023). We posit that some of Gregory Bateson's ideas will be useful as evaluators revisit their epistemologies:

[Bateson] made significant contributions to several sciences ... But perhaps even more important is the fact that he championed a new way of thinking, which is extremely relevant to our time – thinking in terms of relationships, connections, patterns, and context. (Capra, para. 2)¹

There is almost no mention of Bateson in the evaluation literature. A search for the term “Bateson” on the *American Journal of Evaluation* website yielded just four relevant results, though none explored his work. The first references a quote from Bateson that was used by other authors (Harshbarger, 1984). The second is a mention of Bateson's term “deuterolearning” for “learning how to learn” (Saari & Kallio, 2011). The third is a mention of Mary Catherine Bateson (daughter of Gregory Bateson and Margaret Mead) rather than of Gregory Bateson (Patton, 2003). The fourth is a mention of Nora Bateson (daughter of Gregory Bateson and Lois Cammack) rather than of Gregory Bateson's work (Williams et al., 2021). Similarly, a search for the term “Bateson” on the *New Directions for Evaluation* website yielded just one result, in which Grudens-Schuck (2003) cites Bateson. Bateson is neither mentioned nor discussed in Trochim and Urban (2021), Gates et al. (2021), Williams and Hummelbrunner (2011), or Patton (2020); in Meadows (2008), Bateson is mentioned only in passing in the author's note at the beginning of the book; and in Coll (2022) there is mention of Bateson's conceptualization of deuterolearning, with a reference to Visser (2003) rather than to Bateson's work. We consider this limited mention of Bateson in the evaluation literature an opportunity to bring forward some of his ideas, given our belief that Bateson's work is potentially quite useful for evaluators.

Bateson was an early and prominent developer of systems thinking (Ramage & Shipp, 2009; Reynolds & Holwell, 2010; Williams & Hummelbrunner, 2011; SETIG, 2018). We therefore believe that evaluators need to be aware of him and his work as part of knowing the history of systems thinking in evaluation. In recent years there has been increased understanding that the traditional scientific mindset—characterized by reductionism, logical positivism, and linear cause and effect—has limitations and cannot on its own solve complex environmental and social problems (see Morell [2023] and Parsons and Winters [2023] for recent thoughts on application of systems evaluation). In particular, understanding and applying Bateson's criteria of mental process is an essential element of our “idea to consider” for transforming evaluative thinking. In this paper we consider some of Bateson's core ideas and how they might inform and expand evaluative thinking, especially some ideas regarding context, information, logical types, mental process, and sacredness.

Context

Context, which Bateson (1979) described as a “pattern through time” (p. 15), serves as the background within which it is possible for the parts of a story to be connected. Bateson noted that “without context, words and actions have no meaning at all” (p. 16). He provided the example of how behavior may be understood from its context (for example, a dog may signal an intention to attack within the context of contradictory aggressive and submissive behaviors, thereby achieving a message indicating play rather than attack).

Evaluators need to be able to situate an evaluand within a larger narrative and developmental context, rather than solely focusing on the evaluand's own logical framework. As an example, when evaluating a children's reading program, one needs to first understand the overall socio-economic and educational environment of the program, and position the value and role of the project within this context (i.e., horizontal context). One can then examine the developmental trajectory of the program itself; that is, the stage of development of the program (i.e., vertical context).

¹ See also: <http://batesonideagroup.org/> and <https://internationalbatesoninstitute.wikiidot.com/start>

Information

Perception is possible due to difference. Bateson gave the example of a heavy mark made by chalk on a chalkboard. It is due to the difference between the mark and its background that it can be perceived (either by the contrast in color, or by running a finger across the board and up and over and back down the mark), and it is important to note that difference is of the nature of relationship, and therefore not located in space or time. Bateson then observed that **“information consists of differences that make a difference”** (p. 110, italics in original, bold added). Evaluation work is data driven, and focusing on which data to collect during the evaluation process is particularly important. Continuing with the children's reading program example, evaluation focuses on the changes brought about by the reading program, which requires attention to aspects that can truly make a difference (e.g., book quality, children's interest in participation, the school's overall supportive environment and atmosphere), rather than solely on output data (e.g., number of books, frequency of activities). Understanding this concept can help evaluators focus on collecting and making sense of data that are truly informative.

Bateson used the comparative approach of double- (or multiple-) description, by which he sought depth of understanding through perceiving the *difference* that emerges from two (or more) descriptions of a phenomenon (see for example, Bateson, 1979, p. 97).² Simultaneously holding two (or more) perspectives allows for a greater depth of understanding than what would be gained from either perspective alone (e.g., depth perception from binocular vision). Evaluators can also use this comparative approach to view a project from the standpoints and perspectives of different stakeholders, ultimately gaining a more comprehensive understanding and assessment of the evaluand.

Logical Types

The hierarchical structure of thought can be understood in terms of the distinction between a class and the members of that class (i.e., logical types; Whitehead & Russell, 1910–1913).³ Bateson provided several examples of this distinction,

among them: A name is of higher logical type than the thing named, and the setting of a house thermostat around which the temperature of the house will vary is of higher logical type than the control issued by the thermometer (p. 251). Mistaking a member for the class (or mistaking a class for its members) may lead to paradox and problems, the solutions to which are found by restoring an understanding of the hierarchy of logical type. Evaluators need to understand the distinction between a class and a member (or members) of that class in order to describe and assess projects in alignment with the hierarchical level of stakeholder positions and perspectives (continuing with the children's reading program example, different levels with different perspectives include individual children, classrooms, schools, and communities). Evaluators can better navigate the complexities of system change and communication by recognizing and adjusting for the different logical types involved in a program, thereby facilitating more meaningful and transformative evaluations (see Watzlawick et al. [2011, 1974] for discussion of facilitating change).

Mental Process

Purpose-driven systems evolve over time and within their context, exhibiting the mental processes inherent in a mind. We can improve our evaluative thinking about systems evaluation by understanding Bateson's idea that *mind* emerges when six criteria of mental process are met. Since these criteria can be met in a variety of ways, a mind can emerge within an individual, between two individuals, from an organization of more than two individuals, from a natural ecosystem, and so forth. Also, Bateson understood learning (and evolution) to be a form of stochastic process, in which “a sequence of events combines a random component with a selective process so that only certain outcomes of the random are allowed to endure” (p. 253). As Bateson and Bateson (2005) noted, **“the central theme of *Mind and Nature* was that evolution is a mental process. This idea was shorthand for the assertion that evolution is systemic and that the process of evolution shares key characteristics with other systemic processes, including thought”** (pp. 7–8, italics in original, bold

² Consider also the example of two-eyed seeing: “to see from one eye with the strengths of Indigenous ways of knowing and to see from the other eye with the strengths of Western ways of knowing” (Hall et al., 2015, p. 1; Goodchild, 2021).

³ The distinction between class and members of the class is addressed when evaluators use hierarchical models to analyze clustered data.

added).⁴ The criteria of mental process are listed below (Bateson, 1979, p. 102, italics in original).

1. *A mind is an aggregate of interacting parts or components.*

Bateson's premise was that "mental function is immanent in the interaction of differentiated 'parts.' 'Wholes' are constituted by such combined interaction" (p. 104).

2. *The interaction between parts of mind is triggered by difference, and difference is a nonsubstantial phenomenon not located in space or time; difference is related to negentropy and entropy rather than to energy.*

Bateson noted that in the material world:

[We] commonly say that the "cause" of an event is some force or impact exerted upon some part of the material system by some other part. In contrast, in the world of ideas, it takes a *relationship*, either between two parts or between a part at Time 1 and the same part at Time 2, to activate some third component which we may call the *receiver*. What the receiver (e.g., a sensory end organ) responds to is a *difference* or a change. (p. 106, italics in original)

3. *Mental process requires collateral energy.*

The interacting components that make up a mind have their own source of energy. When a person pets a dog, and the dog responds to being petted, each does so with its own source of energy (in this example, obtained from metabolism).

4. *Mental process requires circular (or more complex) chains of determination.*

Bateson used the example of a steam engine to illustrate a circular chain of determination. In simplified form, the engine includes fuel, a cylinder, a flywheel, and a governor. The system is circular so that effects of events at any point in the system can be carried all the way around the system to produce changes at the point of origin (for example, in the way the governor changes the supply of fuel in response to changes in the load on the flywheel in order to maintain speed). Once the effects are carried back to the origin, further change is then

based on a previous change, and we encounter a new logical level. We must keep time in mind if we are to keep this chain of circular effects clear (that is, change, and then change based on that previous change, are sequential in time rather than concurrent). This concept, illustrated here in a simple example, is found throughout far more complex systems.

5. *In mental process, the effects of difference are to be regarded as transforms (i.e., coded versions of the difference which preceded them).* The rules of such transformation must be comparatively stable (i.e., more stable than the content) but are themselves subject to transformation.

As an example, when we look at an object, some representation of that object is housed in our brain. This representation is a coded version of the object, obtained through our sense organs (our eyes, in this example) and filtered by both the physical constraints of the sense organ as well as the biases we have based on prior learnings and experiences. A perception of an object—but not the object itself—exists in our brain.

6. *The description and classification of these processes of transformation discloses a hierarchy of logical types immanent in the phenomena.*

Bateson considers a relationship between two organisms in which Organism A emits a signal (e.g., sound or posture) from which Organism B can learn something about the state of A's existence relevant to B's own existence. For B to deal with A's indication, B must know what that indication means. Thus, there is a class of information that tells B about the coding of messages coming from A. Bateson called these *metamessages*; that is, messages not about A or B but rather about the coding of messages. These codes are conditional on the context of the messages—for example, whether they are playful or otherwise. We again see differing levels: action or behavior in context, and action or behavior that defines context or makes context intelligible (Bateson referred to the latter as *metacommunication*).

Understanding how mind emerges when these criteria of mental process are met can help evaluators view the evaluand, as well as the

⁴ See Morell and LeGros (2025) for a discussion of ecology and evolutionary biology's contribution to evaluation.

relationship between the evaluand and the evaluation itself, as an evolving system. This understanding can also help evaluators and stakeholders see evaluation as a key component in system change. Continuing with the reading program example, these criteria of mental process help us understand how mind is immanent within the program:

1. The program is an aggregate of interacting parts (e.g., program materials, students, and teachers).
2. The interaction between these parts is triggered by difference (e.g., whether or not students make progress with the program materials triggers how teachers respond).
3. The interacting components (e.g., students and teachers) have their own sources of energy.
4. Students' and teachers' responses to their interactions with each other, as well as student progress with the program materials, form complex chains of determination.
5. Effects of differences (e.g., changes in student self-perception and changes in teacher understanding of student progress based on learning) may be regarded as transforms of differences which preceded them (e.g., student exposure to program materials and subsequent learning from those materials).
6. The description of the process of student learning, as well as changed student and teacher perceptions, discloses a hierarchy of logical types (e.g., changes in student learning can lead to changes in the group of students as a whole).

Evaluators can use this understanding to see the reading program and its evaluation as a complex system, and to transform their thinking about the program and how to evaluate it (i.e., their evaluative thinking).

Sacredness

Consideration of the sacred will allow evaluative thinkers to move beyond reasoning and to return to the values underlying evaluative work. Bateson's notion of the sacred is not simply defined; it is inherent in and emerges from patterns that connect

within and across contexts (Bateson and Bateson [2005] worked toward an understanding of the sacred). Bateson's ideas can help evaluators think more about the sacred, as expressed in various cultures. As examples, see Wilson's (2008) overview of Indigenous research methods and ways of knowing,⁵ Chilisa's (2020) detailed presentation of Indigenous methods, Luo et al.'s (2018) example of the importance of evaluators taking into account the religion and spirituality of project participants, and Einspruch et al.'s (2024) example of centering an Indigenous research paradigm during evaluation planning. Further examples come from values inherent in traditional Chinese culture, such as *collectivism* (集体主义) (which prioritizes group cohesion and goals over individual desires or ambitions), the *doctrine of the mean* (中庸之道) (which emphasizes balance, moderation, and avoiding extremes), and *unity of man and nature* (天人合一) (which emphasizes that humans and nature are interconnected and interdependent as part of a unified whole). Keeping Bateson's ideas in mind may help evaluators explore the sacred in our world and in our work.

Evaluative Thinking

Much has been written about evaluative thinking (ET), and a *New Directions for Evaluation* volume has been devoted to the topic (Vo & Archibald, 2018). There are many definitions of ET (e.g., Baker and Bruner, 2012; Archibald, 2013; Buckley et al., 2015; Vo et al., 2018; and Cole, 2023) but no general agreement on any single definition. As an example, one definition is:

ET reflects the ability to creatively arrive at evaluation-specific solutions by determining what combinations of methods, tools, techniques, and theories are appropriate in light of contextual particulars. Making reasoned, *evidence-based* choices set critical thinking and evaluative thinking apart from judgments made based only on deeply held and unchallenged beliefs (e.g., stereotypes). Making a reasoned choice about *value* and being able to defend it is what distinguishes ET from critical thinking. (Vo et al., 2018, p. 40)

⁵ As described by Wilson (2008): Relationality seems to sum up the whole Indigenous research paradigm to me. Just as the components of the paradigm are related, the components themselves all have to do with relationships. The ontology and epistemology are based upon a process of relationships that form a mutual reality. The axiology

and methodology are based upon maintaining accountability to those relationships.... An Indigenous research paradigm is relational and maintains relational accountability (pp. 70–71).

A core function of evaluation is to make value judgments. One definition of value is “a defensible guiding principle or ideal that should be used to determine an evaluand’s standing” (Stufflebeam & Coryn, 2014, p.711). Value could also be determined based on the position and role of an evaluand within a system, as viewed from different frames of reference. This collection of frames of reference could be considered a *reference system* that generates information (i.e., difference(s) that make a difference) by viewing the same program from different perspectives (see also Hawkins, 2022; the concept of reference systems and their application in evaluation is a topic for further development in a future article).

Evaluators evaluate programs and systems that are mental processes. In addition, evaluation itself is also a mental process. Our idea to consider is that Bateson’s ideas may help us expand the discussion of ET and its application in our own evaluative thinking and evaluation work. We pose the following questions as initial prompts for considering how Bateson’s ideas may inform our thinking and work.

- What context provides meaning to the story of an evaluation and its evaluand?
- What differences that make a difference (i.e., what information) exist that can be most useful when engaged in evaluative thinking?
- When engaged in evaluative thinking, where do evaluators encounter tangles caused by mistakes of logical type, and how might they be untangled?
- How can Bateson’s criteria of mental process inform evaluators’ discussions of ontology, epistemology, and systems- and complexity-based approaches to evaluation?
- What can be considered “mind” in a program that is being evaluated?
- How can evaluators incorporate ideas of the *sacred* and of *sacrament*⁶ into their work?

Conclusion

In light of urgent global and local problems, evaluators need to pay increased attention to systems- and complexity-informed evaluation, revisit their own epistemologies, and consider their role in the process of change. An understanding of Bateson’s ideas may help expand the concept of evaluative thinking and improve its application. We

present this paper only to promote conversations about incorporating some of Bateson’s thoughts. We recognize that there is far more depth to explore, and have simply offered a few ideas in hope that others will engage in discussion and provide their own valuable thoughts. We look forward to further conversation.

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⁶ The outward and visible sign of an inward and spiritual grace.

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