

# Using working logic to establish conclusions

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The ability of conclusions to withstand criticism depends on the quality of both the evidence and the reasoning that connects evidence to conclusions. Poor reasoning can provide indefensible conclusions even when there is good evidence. Fournier (1995) presents a strong case for using working logic to avoid this problem. This paper illustrates her points with examples for evaluating transformational development.

## **General logic for all evaluation approaches.**

Within each field of knowledge there is a basic logic that guides inquiry within that field. That logic provides:

- Rules for constructing claims and testing them.
- Basic conditions under which rationale discourse can occur.

There is a basic logic for all evaluation approaches.

- Establish criteria for assessing merit or worth. What are the dimensions that are used to determine if the evaluand is good or bad?
- Construct standards for the criteria. What is the level the evaluand must reach to be judged as good?
- Observe the evaluand's status against the standards. (Rules for observation are quantitative and qualitative to provide reliable and valid results of the observation activities.)
- Organize information about the evaluand to support a judgment about merit or worth.

## **Working logics define the scope of inquiry.**

Each evaluation approach uses a particular combination of rules from the general logic to construct and test claims. To describe the working logic of an evaluation approach, consider the boundaries of four parameters: purpose (Fournier uses "problem"), phenomenon, information needed (Fournier uses "question") and claim.

### ***Purpose of the evaluation.***

The purpose of the evaluation will point to certain inquiry rules in the general logic. To achieve different purposes the evaluator will use different sets of rules. Consider the rules to use if the purpose is to determine which brand of hand pump performs best in desert climates. Now consider the rules to use to determine how using hand pumps instead of fetching water changes the daily life of women.

The basic purpose of transformative evaluation is to show connections between development program activities and the level of love for God and neighbor for community residents.

### ***Phenomenon.***

The phenomenon in its context will have more features than the evaluator can study. The evaluator identifies critical features of the phenomenon and the context that are most relevant to achieving the evaluation purpose. The description of those features and their interrelationships is the evaluand.

Consider the rules you would use to study increased student knowledge when portable computers are given to students in classrooms that are overcrowded, located in violent neighborhoods with most of the students coming from homes with only one adult present. What different rules would you use to study increased student knowledge when the computers are purchased by students in classrooms located in nonviolent neighborhoods?

In transformational development the spiritual maturity of the development facilitators is a critical feature. Involvement of the faith communities in the development program is another critical feature. The percent of households in religious categories in the service area is a critical feature of the context.

### ***Information needed.***

Evaluators use different sets of inquiry rules to collect and analyze different types of information. The purpose of the evaluation and the description of the evaluand determine the information that is needed. Often the list of information needs appears as a list of questions.

Continuing the transformative evaluation example important questions include:

- In what ways are the development facilitators guided by their faith as they think and act in their work?
- How do community residents describe the development facilitators? What is the relationship between the most common perceptions of the facilitators and the desired characteristics of facilitators seeking to foster individual and social transformation?
- How do faith community representatives describe the purpose of the development program? What do they describe as program successes and program weaknesses?
- What do program participants say about program successes and program weaknesses?
- What changes do participant describe in themselves and their neighbors as a consequence of the program presence in the community? To what extent are these changes consistent with transformational development outcomes?

### ***Claim.***

There are different evaluative claims. Different sets of rules are appropriate for justifying different types of claims. Describe the evidence that would persuade you that when students

use computers they acquire more knowledge. What evidence would persuade you students using computers in classrooms is a cost-effective means of instruction?

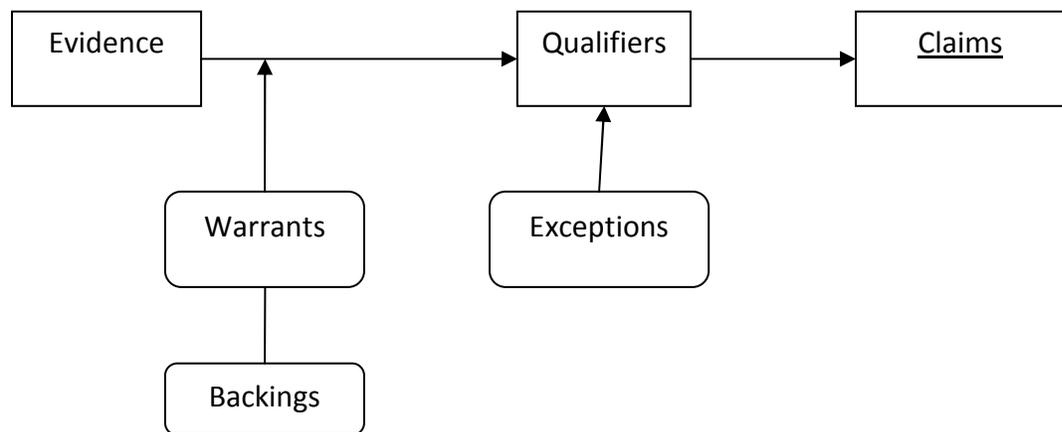
Describe evidence that would persuade you transformational development does not favor participants in a particular religious category.

Describe evidence that would persuade you development facilitators less mature spiritually are less effective in helping the program achieve its goals and objectives.

### **Working logic builds a defensible argument for a claim.**

Fourier (1995) describes five logical features of an argument in support of a claim identified by Toulmin (1964). (A search for material on the Toulmin method of argument produces slightly different versions of the list of logical features. Fourier's list is appropriate for this discussion.)

Simplified version of Figure 2.5 (Fournier, 1995, p. 24)  
Six Main Logical Features Common to All Inquiry



### ***Evidence.***

Evidence is the body of facts that form the basis for a claim. In transformative evaluation a claim of interest is: Development facilitators with greater spiritual maturity are an important component of successful transformational development programs. Think about relevant evidence to test this claim.

- There must be some measure or combination of measures for program success. Possible candidates include: degree to which program outcomes are achieved; community residents' satisfaction with the presence of the program in the community; proportion of significant change stories that include reference to increases in love of God and neighbor, etc.

- There must be some measure of spiritual maturity. Examples: ratings by colleagues on various dimensions of spiritual maturity (self centeredness, willingness to pray with you, humility toward others, etc.); knowledge about what Jesus would do in different situations; time spent in doing spiritual disciplines, etc.
- Estimates of time allocated to different program responsibilities. This may account for variations in success more than spiritual maturity.
- Etc.

**Warrants.**

Warrants justify the inferences from evidence to a claim by appealing to some authority. In science two common sets of warrants for causal claims are provided by experimental designs and quasi-experimental designs.

Warrants	Claim
<p style="text-align: center;">Experimental Designs Using warrants</p> <p>Randomized samples, experimental control groups, pre-post tests. Relating sample size to estimated variability of the measures strengthens the claim.</p>	<p style="text-align: center;">X causes Y.</p>
<p style="text-align: center;">Quasi-experimental Designs Establishing warrants</p> <p><u>Verification</u>: Pattern matching of causal predictions to obtained data. The more often that predicted causal effects are verified by data the stronger the claim.</p> <p><u>Falsification</u>: ruling out of alternative explanations. The more plausible explanations are shown to be false the stronger the remaining claim.</p> <p>Comparison groups, pre-post tests.</p>	<p style="text-align: center;">X causes Y.</p>

Using warrants versus establishing warrants. Within a field of knowledge there can be uncontested warrants such as experimental designs in science. In transformational development, however, there are very few uncontested warrants (I cannot think of any). Generally there is a need to establish warrants. This is a process of constructing warrants and applying them in a number of cases.

This is an appropriate role for transformative evaluation: articulating a working logic for constructing and applying warrants. As we learn more about specific warrants we may reach a point where we can defend the claim that X causes Y in some aspects of transformational development.

Consider the claim: Development facilitators with greater spiritual maturity are an important component of successful transformational development programs. Some things to think about to establish a relevant warrant follow; there are others.

From an ethical perspective using an experimental design to randomly assign facilitators to development programs is not feasible. Programs have different combinations of objectives determined by context. Therefore the inquiry should be conducted in enough programs to represent the variation in contexts and combinations of objectives. For a large development agency this means the study will include multiple countries.

Facilitators vary in development experience, personality factors that affect the quality of relationships with community members, facilitation skills, technical knowledge related to program objectives, etc. The more of these factors that can be included in the study the stronger the warrant will be.

Of course the measures of spiritual maturity and program effectiveness need to be developed. This is work that should be done prior to establishing a warrant. Otherwise, the expense of conducting the study may be wasted if the measures are deemed invalid or unreliable.

Establishing a warrant is a long-term effort that requires vision and a commitment to move toward the vision step by step. Do not despair! Those who believe in transformational development can make a compelling case over time.

### ***Backings.***

Backings support warrants by appealing to some more general authority. In the example I have been developing the literature on quasi-experimental design is such an authority. The literature on spiritual maturity is another authority.

### ***Conditions of exception.***

Conditions of exception describe circumstances where the warrant may not hold. Regarding the claim that facilitator spiritual maturity is associated with program success contextual factors may provide exceptions.

- The prevailing faith of the program area could affect program success more than facilitator spiritual maturity. For example, if there is strong participation by local churches in the development program this may override variation in facilitators. If there is conflict among different faiths in the area variation may not matter.

- Other characteristics of the facilitator may interact with spiritual maturity. For example, for experienced facilitators spiritual maturity may be associated with program effectiveness but it may not be for inexperienced facilitators.
- Spiritual maturity may not be associated with effectiveness unless the facilitator serves the same community for a number of years.
- Etc.

### ***Qualifiers.***

Qualifiers identify the strength of the claim. Some examples include: always, never, is, are, all, none, and absolutely.

- Always and never change to sometimes;
- is and are change to may be or might;
- all changes to many or some;
- none changes to a few; and
- absolutely changes to probably or possibly. (Retrieved from <http://courses.durhamtech.edu/perkins/toul.html>)

### **Five implications for practice and theory.**

The implications describe how focusing on general and working logic can strengthen evaluation conclusions and strengthen evaluation as a field of knowledge.

#### ***Provides a way to view evaluation approaches.***

The distinction between general and working logic can lead to better evaluation work across all approaches. The focus on strong reasoning skills is important for any evaluation approach. It will inform the various debates among evaluators.

#### ***Illuminates how evaluation reasoning is influenced.***

Carefully examining the logic can lead to stronger cases for ruling out alternative explanations for the results. It also can strengthen the case for the evaluator's judgment in stating a claim a particular way.

#### ***Provides a practical tool for studying practice and theory.***

Since working logic is a feature of every evaluation it provides a sound way of critiquing evaluation practice and theory. Analyzing the use of warrants across approaches and settings can lead to stronger evaluation conclusions in general.

#### ***Accounts for differences between positions on issues.***

Fournier analyzed the claim that the logic of evaluation developed by studying product evaluation did not fit program evaluation. She discovered that the general logic did fit, but the working logics are quite different.

### ***Clarifies professional identity.***

General logic shows the difference between evaluation and non-evaluation. It provides a core understanding around which evaluators can develop their profession.

### **References**

Fournier, Deborah M. (1995). Establishing evaluative conclusions: a distinction between general and working logic. *New Directions for Evaluation*, 68, 15-32. San Francisco: Jossey-Bass.

Toulmin, Stephen E. (1964). *The uses of argument*. New York, New York USA: Cambridge University.

### **Further reading**

Read the other articles in Fournier, Deborah M. (Ed.) (1995). *Reasoning in evaluation: Inferential links and leaps*. *New Directions for Evaluation*, number 68. This volume can be purchased from Jossey-Bass publishers.