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Clarifying concepts and categories of assumptions for use in evaluation

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Highlights

- The conversation on assumptions aware evaluation practice should begin with a coherent synthesis and categorization of assumptions.
- Existing assumptions typologies include among others: paradigmatic, program theory (normative, diagnostic, prescriptive, causal, external,) and methodological assumptions
- Typologies help program design and evaluation because the notion of ‘assumptions’ is too broad and too commonly used to actually be clear and useful.

Abstract

In order to advance systematic examination of how evaluators work with assumptions, there is need for; first of all, a coherent synthesis and categorization of assumptions, as well as a discussion of their varied relevance in program design and evaluation. An emergent typology of assumptions as they are used in the literature will be proposed based on categories of assumptions as used in literature. The critical role and potential contribution of the articulation of paradigmatic, normative, diagnostic, prescriptive, causal, external and other assumptions in program design and evaluation are discussed and then evaluated for utility to current evaluative practice.

"One program's overelaboration is another program's clarification." -Carol H. Weiss

In order to advance systematic examination of how evaluators work with assumptions, there is need for; first of all, a coherent synthesis and categorization of assumptions, as well as a discussion of their varied relevance in program design and evaluation. Recent work by a variety of evaluators has pointed to a multiplicity of ways that assumptions play a crucial role, particularly with complex evaluands or in in complex contexts, in successful program design and evaluation – leading to a number of different proposed/potential categories and subcategories of assumptions such as diagnostic prescriptive, causal, and external assumptions. Faced with the challenge of working with increasingly complex programs in complex contexts, this kind of synthesis is essential for understanding the value and utility of an increased awareness of the role of assumptions as well as different assumption-aware tools available to evaluators – Which are the appropriate tools for the relevant assumptions? Using a pragmatist lens with a focus on

clarity and application, this article will discuss that a range of t categories of assumptions as well as key terms. Examples from recent evaluative work will be cited to illustrate the role of different kinds of assumptions. An emergent typology of assumptions as they are used in the literature will be proposed based on categories of assumptions as used in literature. Typologies will address paradigmatic, program theory, and methodological assumptions. This article then discusses key concepts and assumption categories, synthesizes the development of the concept of assumptions in various lines of philosophical inquiry to support an emergent typology of assumptions. The critical role and potential contribution of the articulation of paradigmatic, normative, diagnostic, prescriptive, causal, external and other assumptions in program design and evaluation are discussed and then evaluated for utility to current evaluative practice.

The ubiquity of assumptions

Assumptions are generally understood as beliefs, expectations or considerations that are taken for granted about how the world works (Brookfield, 2005). They may be tacit (unarticulated) or explicit (articulated). They may or may not be valid. Assumptions affect every step of evaluation from assessing relevance and need to program implementation to finally the evaluation of program objective achievement. Although evaluators have always worked n programs a that were *complicated* often with many interacting components and actors, the recent focus of evaluators on better understanding of *complexity* is an explicit acknowledgement that these complicated interactions have unforeseen connections, feedbacks and work at multiple scales – resulting in unexpected outcomes and stakeholder uncertainty (Patton, 2010; Bamberrger, 2013). Awareness of the assumptions that underlie program design and play into the

evaluation process has great potential for striking at the heart of these uncertainties and false expectations -- so prevalent in our current complex practice of evaluation in the real world.

The ubiquity of assumptions in evaluation can therefore be examined from two stand points:

a) Complex evaluands are designed and implemented in complex contexts

b) Assumptions permeate stakeholders' and evaluators' mental frames

Complex evaluands are designed and implemented in complex contexts

A major reason why assumptions confound evaluation is that evaluands (projects, programs, policies) are complex. For example, programs seek change at various levels such as individual, family, institution, and wider community or society levels. The pathways by which immediate changes trickle from one level to another e.g. from community to family or from individuals to communities are often neither defined nor empirically tested *(Connell et al, 1995).* There are many factors that are often beyond the control of program stakeholders, such as macro-economic trends and political, demographic and social factors that affect the success of programs. Programs have to continuously adapt to their changing environments and this makes it difficult to track progress, as targeted outcomes and indicators keep changing from what was originally conceptualized in program designs and what may have been tracked initially *(Connell et al, 1995).*

Connell et al *(1995:3)* outline several reasons why complexity makes community development programs so difficult to evaluate:

a) Community development programs work across a spectrum of sectors *(Horizontal complexity)*. It would be easier to track results in each individual sector. However, tracking results by sector, though easy to do, undermines the role of inter-sectoral synergy. On the other hand, it is very challenging to measure the effect of inter-sectoral synergy.

b) Programs work towards change at the individual, family, and wider community level *(Vertical complexity)*. However, it is not clear if and how change trickles from the individual to the family and then to the community or from the community through family to the individuals.

c) There are many factors that are often beyond the control of stakeholders, such as macro-economic trends and political, demographic and social factors that affect the success of development programs *(Contextual complexity).*

d) Programs are flexible and revolving: they are developed from efforts to make programs relevant to the communities where they are implemented. Hence the programs are constantly changing to adapt to changes in the communities. This makes it difficult to track progress, as targeted outcomes and indicators keep changing from what was originally conceptualized in program design documents and what may have been tracked initially.

e) Programs aim at a broad range of outcomes, which confound measurement and tracking. The domains in which development programs seek improvements, such as community empowerment, child well-being, and local economic structures are difficult to operationalize and measure.

f) The absence of comparison or control groups (particularly at the community level) can make evaluation difficult. As most of these programs aim to benefit all members of the

community directly or indirectly, it is difficult to find "comparison" communities not benefiting from the interventions. It is thus hard for evaluators to say that changes in the target group(s) resulted from the specific intervention(s).

As an effort to comprehend complex program aspects, simplification-usually with the use of assumptions, is inevitable for real world evaluators. A common form of program simplification is the assumption of simple and linear relationships. *Patton (2010)* refers to this assumption as the "Ceteris paribus hoax": "all things are equal or holding all else constant, in which the environment is simply assumed to be stable, constant and nonintrusive" *(p. 197).* According to Patton, "such an assumption makes for nice, neat, bounded, controlled and fundamentally misleading evaluation studies, if the object of study…just happens to be taking place in the real world" *(Patton 2010: 197).*

Evaluation is even more challenging when program designs do not articulate assumptions on which they are based, e.g. how immediate program outputs should lead to desired outcomes. Commonly used program design tools have emphasized examination of external assumptions-preconditions beyond stakeholders' control at the expense of critical diagnostic, prescriptive and causal assumptions that are often within stakeholders control and influence.

Assumptions permeate stakeholders' and evaluators' mental frames

A major source of individuals' subjective personal, emotional and psychological beliefs the context of environments created by family, friends, colleagues, culture and society at large in which they are socialized, to which they are raise or exposed. After we form the beliefs, we defend, justify and rationalize them with a host of intellectual reasons, cogent arguments, and rational explanations *(Shermer, 2011).* These beliefs present themselves-usually subconsciously

as bias. Bias may sometimes be contradictory to our conscious beliefs, yet influences individuals' behavior and can have consequences like social stereotyping, prejudice, and sometime discrimination *(Banaji& Greenwald, 1994; Blair, 2002; Blair et al, 2001; Greenwald et al, 2003).*

Just as tacit assumptions and expectations both consciously and subconsciously influence stakeholders' decisions and expectations, unearthing these tacit assumptions-as they relate to aspirations and values, the desired outcomes of an interventions, and how these outcomes are expected to emerge, is critical to understanding an evaluand and making appropriate choices for evaluation methods and tools. Similarly, the explication of evaluators' assumptions underlying choice of methods, tools and crafting of conclusion is essential for understanding and applying the proceeds of an evaluation.

Assumptions explication and "beautiful" evaluation

Good evaluation should produce evidence from which stakeholders can learn and base decisions. House has argued that what stakeholders do with evaluation information is much more complex than what the findings say *(House, 1977)*. It is more than convincing evidence and logic that an interventions works or doesn't. It is about arguments and interpretations that are applied an evaluation's method choices and outputs to persuade stakeholders towards a certain reasonable point of view or course of action *(ibid).* In defining quality evaluation, House provides an even broader definition of validity-one that transcends accuracy of designs, to address three criteria -- truth, beauty and justice *(House 1977, 1980, 2014)*. "Truth is the attainment of arguments soundly made, beauty is the attainment of coherence well-wrought, and justice is the attainment of politics fairly done." *(Montrosse-Moorhead, Griffith & Pokorny, 2014, p. 97).* "Beauty" has to do with the aesthetic qualities such as coherence and appropriate

forms of communication that support the credibility of an evaluation argument *(Bledsoe, 2014).* Unearthing assumptions e.g., about values, principles, and the reasoning used to arrive at robust conclusions is an essential part of developing well-crafted and coherent evaluative arguments *(Davidson, 2014; House, 2014).*

Assumptions explication as pragmatism

It's worth noting that assumptions analysis is supported by several philosophical traditions including pragmatism. As a philosophical tradition, pragmatism asks the question: what are the implications of this proposition, what difference does it make, to what extent would that proposition conceivably matter to stakeholders? *(Kaplan, 1963).* The epistemological stance in pragmatism is that knowledge is not merely a contemplation of reality, it's how we contemplate reality. "To say that we know is to say that we do rightly in the light of our purposes, and that our purposes are thereby fulfilled is not merely the sign of knowledge, but it's very substance" *(Kaplan 1963, p. 43).* With regard to *how we know*, pragmatism emphasizes clarity and elaborateness of proposition. That the true test of a proposition is whether or not stakeholders do understand it enough to know clearly what they would do if they believed the proposition *(Kaplan, 1963).* Establishing clarity requires explication and examination of one's and others' actions, mental frames and assumptions *(Hall, 2013).* Assumption examination is not only essential in establishing clarity, it's a critical part of scientific inquiry. Inquiry proceeds on countless assumptions that always need to be verified. The inquirers then gather evidence in light of these assumptions *(Sosa, 1974; Kanazawa, 1988; Read, 2003).* When evidence shows that an assumption is faulty, a new proposition or theory emerges.

Emerging typologies for assumptions

If the examination of assumptions is to be encouraged in evaluation practice, a shared understanding of different assumption categories and their relevance to program evaluation is necessary. Therefore we discuss a range of emerging assumptions categories to facilitate ongoing and future discussions on assumption aware evaluation practice. Some catagories such as paradigmatic assumptions have been discussed earlier *(e.g. Mertens 2012; Nkwake, 2013, 2015,).* In the proceeding sections, we reiterate some of these descriptions and then make emphasis on the program theory assumptions typology.

Paradigmatic assumptions

Paradigmatic assumptions are rooted in research paradigms-what we use to structure the world around us. They may be ontological, epistemological or axiological assumptions: Ontological assumptions concern the nature of evaluand features we seek to measure-such as outcomes and impacts of interventions. For example, evaluating a program seeking to improve community resilience, may call into question whether community resilience is a precisely decipherable and objective fact such as change in monetary income, or where community resilience is subjective, latent, such as individuals' perceptions of what they can or cannot do.

Epistemological assumptions arise in reference to ways in which evaluand features can be ascertained. One's assumptions about the nature of evaluand features (ontology) are related with assumptions on how evaluands can be studied (epistemology). As in the example on ontological assumptions above, the evaluator who assumes that the state of a community's resilience is an objective fact also assumes that this "objective fact' can be studied without bias.

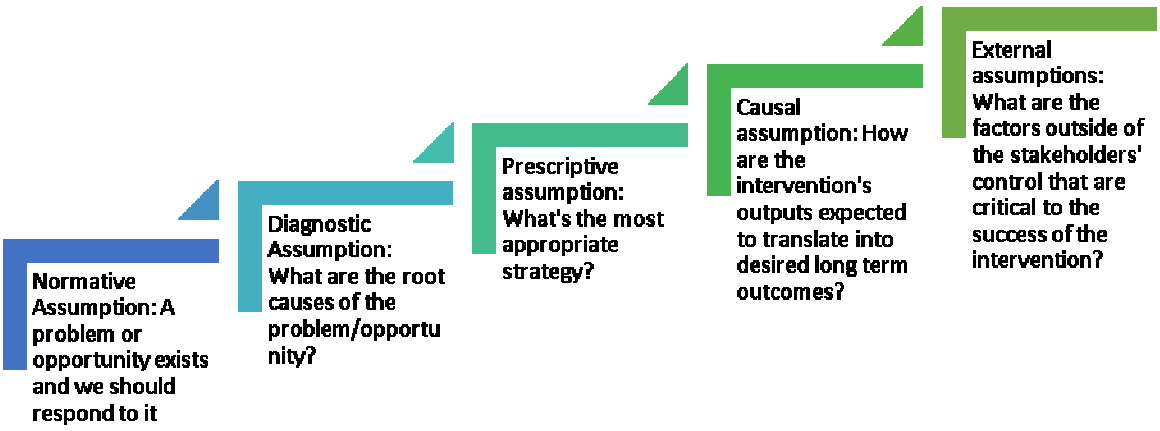
Axiological assumptions are related with stakeholder values- whether and how we expect values to pry in the processes or the products of evaluation. This further confirms that axiology is

related to epistemology. The assumption of objective reality may imply that values-either of the evaluator or the study participants; confound the process and product of inquiry.

Program theory assumptions

A number of assumptions arise in the design of programs (or other evaluands). These may include among others: normative, diagnostic, prescriptive, causal and external assumptions (Nkwake, 2013) *(see figure 1).*

Figure 1: Program theory assumptions



Normative assumptions:

These are the considerations right from before an intervention is devised, that there exists a problem and (or opportunity) that deserves a response-that there is a discrepancy between the reality and what is ideal. Such concerns are rooted in stakeholder values. For example, the fact

that only one in every seven leaders in Africa's agricultural research and development is a woman is considered to be, not just a form of inequity, but also an impediment to agricultural productivity because questions such as: how long a variety takes to cook, how much fuel, water and time a variety takes to cook not likely to be raised by male researchers whose traditionally ascribed gender roles exclude food preparation.

Diagnostic Assumptions

Diagnostic assumptions are stated as stakeholders' perceptions of the major and minor causes of the core problems. Since the intervention to address a problem is based on the causes of that problem, diagnostic assumptions are crucial to a normative theory and need to be examined from design, implementation and evaluation perspectives. They are related to Chen's *(2005)* normative theory, which refers to what the structure of the program should be-the intervention, implementation processes and outcomes. Diagnostic assumptions are most commonly made during the early phases of program planning – particularly the needs assessment/problem identification stage.

An example of diagnostic assumptions can be found in World Health Organisation (WHO)'s response to the Haiti Earthquake. In January 2010, the WHO launched a massive public health response in the aftermath of the Haiti Earthquake. Concerned about the overall health and wellness status for much of the country, the interventions implemented represented a comprehensive plan to not only respond to the crisis and impending perils at hand, but also to improve baseline health status for Haitians. In this case, the earthquake could be mistaken for the root cause; but the truth is, difficulty in accessing quality healthcare in Haiti is a long-standing issue *(Biesemeyer, 2015).* People in Haiti lack basic access to healthcare, clean water, sanitation

and food. This could be the result of systemic poverty, low educational attainment, poor infrastructure, and faulty agricultural practices. Poverty is the most likely source of poor health quality in Haiti. More than half the population lives below the extreme poverty line, which would make it difficult to afford basic and preventative medical services to establish general wellness. A second source of poor health is likely low educational attainment. This, as a root may cause poor health, and would eventually result in limited knowledge about how to prevent the spread of illness, treat infections and disease, and the importance of vaccinations. At the time of the earthquake, only 53% of Haitians had been vaccinated for Tetnus, Diphtheria, and Pertussis, and similar rates of inoculation are found for polio, measles, mumps, and rubella (MMR), and bacilleCalmette-Guerin (BCG) *(Biesemeyer, 2015).* Not having these vaccines increases the likelihood of disease outbreak and death from preventable illness. These unfortunate trends complicated the impact of the earthquake *(Biesemeyer, 2015).*

Prescriptive Assumptions

Prescriptive assumptions are what stakeholders consider ought to be happening in a particular situation *(Brookfield, 1995; Brandenburg, 2009).*Thus, prescriptive assumptions are at the intervention or strategy devised to resolve the problem or to reach a stated objective, which represents stakeholders' beliefs of what could be the best ways to address the problem or need. An example of prescriptive assumptions can be illustrated by the Norwegian Refugee Council (NRC) Education Program in Columbia, which was intended to improve the educational access, capacity and quality amongst internally displaced persons within Columbia by filling the gaps not covered by other organizations or government entities. The considerations that arose in the prioritization of strategies for this program were that flexible and informal education models

would be the most appropriate strategies for reaching displaced children who do not have access to formal classrooms; and that job training within the flexible education model would be the most appropriate way to bring employable skills to individuals displaced *(Billings, 2015).*

Causal Assumptions

Causal assumptions are also referred to as 'behind the scenes' assumptions by Mayne *(2011);* descriptive assumptions by Chen *(2005);* and transformational assumptions by Nkwake *(2013).* They are related to what Anderson *(2004)* refers to as 'pre conditions' in the outcomes pathway-which is an illustration of the relationship between actions and outcomes and also shows how outcomes are related to each other over the lifespan of the initiative. It is the most commonly recognized component in a theory of change because there are many planning approaches that employ boxes and arrows to depict program elements. All changes or results in the pathway of change is a precondition to the long-term goal. That is, the outcomes on the path are all required to reach the goal—without each of them in place, we assume the goal cannot be attained. Assumptions explain both the connections between the preconditions for long-term change that occur in the early and intermediate stages of the change process, and the expectations about how and why proposed interventions will bring them about. According to Chen *(2005),* transformational assumptions are assumptions about a causal process through which an intervention is supposed to work—its success depends upon their validity.

The difference between prescriptive and causal assumptions is that while prescriptive assumptions are related to strategies (and alternatives) devised to address a problem, causal assumptions relate to how the immediate results of a strategy program or intervention (outputs)

are expected to lead to long-term desired changes. An example of causal assumptions can be illustrated by the Louisiana Bucket Brigade (LABB)'s program for advocating for the rights and health of residents living near petrochemical processing facilities, increasing the education of pollution related issues of these individuals, and empowering communities to take action by documenting health effects, pollution events and associated outcomes (sights, smells, sounds, etc.). LABB assumes that in order to bring about appropriate changes in legislature, there has to be proper documentation of petrochemical pollution and its effects on health and wellbeing needs to take place; and in order for this documentation or information to be of much advocacy value, communities have to be empowered to use the information e.g. for demanding accountability from those holding public offices (McCormick, 2012; *Frost, 2015).* Mayne *(2014)* identifies four sub categories of causal assumptions along a causal pathway-reach, capacity, behavior, and behavioral assumptions.

a) *Reach assumptions* are related to preconditions for the targeted beneficiaries positively responding to and participating in an intervention's activities. E.g. will mothers attend the nutrition education sessions without alternative childcare arrangements made to care for the time they are away?

b) *Capacity assumptions* are related to preconditions for changes in knowledge, attitudes, skills, aspirations, opportunities and incentives of those who have received or used the intervention's outputs. E.g. will mothers reconcile new information on nutrition with potentially contradictive beliefs?

c) *Behavioral assumptions* are related to preconditions necessary for the changes in actual practices that occur. For example, will mothers afford the recommended and more nutritious diet?

d) *Wellbeing assumptions* are preconditions necessary for eliciting the long term outcomes, which are ultimately about improved wellbeing of targeted participants. For example, the nutritional status of children whose mothers are practicing better feeding would still be compromised by illness in the absence of good hygiene and vaccination.

External assumptions

External assumptions are conditions or factors outside the control of program stakeholders and outside of the program's intervention that, yet critical to the project's success *(EC, 1999).* An example of external assumptions can be illustrated by the Louisiana Bucket Brigade advocacy program. One external assumption for the LABB is that despite its enormous power the petrochemical industry will follow guidelines set out by changes in legislature, considering that any legal action taken against the petrochemical refinement industry may prove more costly than it is worth *(Frost, 2015).*

Conclusion

The explication of all these and other important assumptions is not only crucial for a program's success but also for creating a better understanding of how a program's success does or doesn't come about. Evaluators from theory based, developmental and other evaluation perspectives can apply a range of tools discussed in chapter six to earth these assumptions within exante, formative or summative evaluations to improve the credibility and relevance of evaluation findings.

Focusing on the program design, program evaluation and program redesign cycle – articulating assumptions is key to adaptation of programs, program iterating with complex

contexts, evaluations adjusting programs upon better articulation of connections in complex evaluands. The typologies helps that process because the different categories of assumptions add value to different parts of this cycle. Typologies help program design and evaluation because the notion of 'assumptions' is too broad and too commonly used to actually be clear and useful.

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