FUTURES GLOSSARY

Assumption

English

1. Futures definition

Assumptions are implicit or explicit ideas that are taken for granted. Serving as building blocks of the models or frames that humans use when considering an issue, they influence how we act in the present. Assumptions about the future are usually called anticipatory assumptions. These assumptions can be imagined, although they are often rooted in the implicit or explicit ideas of the past and the present. They are important objects of investigation in the futures field.

2. General definitions

The dictionary definition of assumption or *assume* uses the verb *take* in the description: Something is taken for granted or true without proof, such as a fact or statement, or a proposition (Merriam-Webster, n.d.-a).

In mathematics, a tacit or implicit assumption is an idea that underlies a logical argument or decision that is "not explicitly voiced nor necessarily understood by the decision maker" (Wikipedia English, n.d.). Both the dictionary definition and the mathematics interpretation of assumption relate closely to the futures use of the term.

For theoretical work in *social science*, the *SAGE Encyclopaedia of Social Science Research* (Beck et al., 2004) defines assumptions as "the starting axioms and postulates that yield testable implications spanning broad domains," noting that assumptions are 'ubiquitous' in social science. In the context of *scientific theory* in particular, assumptions are seen as the heart of the theory, embodying "what Popper (1963) calls 'guesses' about nature, guesses to be tested, following Newton's vision, by testing their logical implications" (Beck et al., 2004).

In *philosophy of science*, assumptions are closely connected with views and positions about reality, about what could be known and how, and about value judgments that can be expressed as shared commitments within a certain paradigm. Assumptions could also refer to background conditions for knowledge production or to the core structures and foundational elements of reasoning, which lead to inferences and conclusions.

Another general use of assume in English refers to taking a position, taking control or responsibility, or taking an attitude (Merriam-Webster, n.d.-a). In the futures field, the terms *responsibility* or *agency* would serve better in these contexts, showing a terminological distinction in the use of assumption.

In Christianity, the term *take* also appears in association with Assumption, which refers to the Virgin Mary being taken up into heaven.

3. Etymology

The verb *assume* comes from the Latin *assumere or assūmō,* which combines *ad* (to, towards, at) with *sūmere* or *sūmō* (take). Something is taken up toward something. This Latin root links to the frequent use of *take* in the general definitions above.

Similarly, the German word for assume is *annehmen*, where *nehmen* means to *take*, as in Latin *sūmō*.

4. Field of terms

Several synonyms for assumption are in use, especially in mathematics. These include *axiom* from Greek axíō ma, meaning a self-evident principle, and several terms from Latin, such as *postulate* (postulatus, to demand or assume as true), *supposition* (sub-positiō, under position), *presumption* (prae-sūmere, to take before), and *premise* (prae-mittere, to set before) (Merriam-Webster, n.d.-a). Of the above terms, assumption appears to be the most easily understandable in English.

In mathematics and logic, several neighbouring terms are used that differ somewhat from assumption. A p*roposition* is a weaker, more general suggestion or an idea. A *conjecture* also refers to an unproven idea that is thought to be true but is actually more of a guess. By contrast, a *theorem, which* is a statement that has already been proven, is stronger than an assumption. A *lemma* refers to a helping theorem. *Facts* are known to be true because of measurement or repeated observations. *Probabilities i*n everyday use imply high degrees of likelihood, carrying mathematical significance and suggesting quantifiable outcomes, which can be calculated on the basis of past and present evidence, distinguishing them from assumptions.

Another related term from mathematics is *hypothesis* (from Greek, *hupotíthēmi*, to put under), which refers to an idea that is proposed in order to be tested, even if just via argument, to see if said idea might be true (Merriam-Webster, n.d.-b). Such hypotheses are often of a causal *if-then* nature. However, in complex systems that are under investigation in most futures projects, such replicable tests are not usually feasible. This lack of feasibility is especially the case with statements about the future, which does not exist. Nevertheless, when acting in complex systems, a hypothesis about possible effects in the future is useful.

The term *belief* refers mainly to the attitude that the receiver has toward a statement that was sent via some communication. The receiver may believe the statement, consider it as true, and accept the word. “A belief may be considered an attitude towards a proposition, that is, towards the meaning of a sentence stating (truly or falsely) matters of fact” (DeLanda, 2007, p. 52). Beliefs can be of different intensities, while assumptions possess a binary yes-no character.

Judgment is also different from assumption because the term refers more to (the quality of) the process of legalistic, sociocultural, or political discernment that leads to a decision.

Since assumptions are of a *yes-no* nature, there is no need for antonyms in futures studies. Either something is assumed, or it is not.

As the future can only be imagined, assumptions specifically about a time later than now are closely connected to *imagination.* Anticipatory assumptions both influence and are influenced in dynamic ways by dominant socially held images of the future. Such collective images frame perceptions about the future and condition collective and individual imagination and action in the present.

5. Theoretical foundations

A significant corpus of work on assumptions relates to *informal logic*. According to the *Stanford Encyclopaedia of Philosophy*, informal logic focuses on methods to understand and improve thinking, reasoning, and argument in real life contexts such as in public discourse, education, and intellectual exchange, including intradisciplinary dialogue and metalogue, interpersonal relations, and other fields (Groarke, 2026). The work of Michael Scriven, an important contributor to the field of logic, calls for the formulation of unstated assumptions as a prerequisite for the analysis and reconstruction of an argument, highlighting that "the most difficult part of reconstructing an argument is fair and clear formulation of the 'missing premises.' i.e., unstated assumptions" (1976).

Ennis (1982) distinguishes between two kinds of implicit assumptions, which are 'used assumptions' and 'needed assumptions. "Sometimes implicit assumptions are propositions that are needed to support the conclusion, to make the argument a good one, to make a position rational, etc. On the other hand, sometimes they are unstated reasons that a person actually used consciously (or subconsciously, if you believe in subconscious reasons) as a basis of argument or action" (Ennis, 1982, p. 63).

Moreover, within the *critical thinking* school of thought, identifying assumptions is considered an essential endeavour. The approach to assumptions in informal logical and critical thinking resonates with the uses of assumptions in futures work.

The economist Jean Tirole stresses the universal role of assumptions and how they influence perception and choice: "Any scientific discipline, any theory, formal or informal, rests on assumptions. These assumptions matter, and in the case of social sciences, influence our vision of society and our policy recommendations" (Tirole, 2019, p. 1). He concludes that "the process of expliciting assumptions is crucial. It allows us to understand whether these assumptions are made for mere analytical convenience or to the contrary drive the very conclusions we want to highlight. Clearly stating our assumptions enables others to adhere to, reject, or propose improvements to these assumptions. This is part of the scientific method" (Tirole, 2019, p. 12). Expliciting assumptions is (or should be) part of working with futures.

The *theory of anticipation* has been suggested by a growing number of futures researchers and scholars as the theoretical foundation of Futures Studies. According to this view, Futures Studies entails the investigation of anticipatory systems and processes and the models that are used to represent them. The theoretical basis lies in the ideas of relational biology as developed by Rashevsky, Rosen (2012), Louie (2020), and others. According to these scholars, anticipatory systems contain internal predictive models of themselves and of their environment. Through encoding and decoding, a modelling relation can be drawn between the natural system and a formal system or model. A model is "an encoding of qualities, or observables, of a natural system into formal mathematical objects" (Rosen, 2012, p. 261).

Louie defines a model as "a simplified description of a system put forward as a basis for theoretical understanding; a conceptual or mental representation of a thing; an analogue of different structure from the system of interest but sharing an important set of functional properties" (Louie, 2020, p. 5). In futures work,

model-building, especially via simplifications, representations, or system analogues, is important.

Assumptions serve as the building blocks of models. They are a vehicle to focus on selected aspects of reality and are linked to the model's domain. Modelling, via the choice of appropriate variables and mappings, is more an art than a science. A model is always incomplete, incapable of becoming the equivalent of the complex or impredicative system or world which it proposes to sense and make sense of. In futures work, the model that individuals have about the later-than-now should be consistent with a system of assumptions, and those assumptions, in turn, allow a description of the model.

6. Use in practice

In futures work, our images of the future can serve as entry points to work with assumptions. Underlying assumptions populate our relationship with the future, as well as the processes and outcomes of futures work such as forecasts, plans, signal spotting, trend analyses, scenarios, and visions. Revealing, making explicit, analysing, questioning, and reframing assumptions that organisations, groups, or individuals hold about relevant system elements and the relations of specific systems is an essential part of futures work.

The movement of assumptions from implicit to explicit reveals the models, the frames, or the boxes that people have about, for example, work, a company, education systems, or themselves, especially as agents of change. Because different people may have different assumptions and models, revealing and knowing them is important. And comparing these assumptions and models between people may lead to a greater variety of assumptions and richer models, etc.

In a next step, these models can then be used for prediction and control, as in relational biology. Moreover, and perhaps more importantly, humans are capable of diversifying these assumptions and creating new models as a basis for breaking out of the revealed boxes to explore futures beyond those considered probable and desirable, allowing for sensing and making sense of novelty as changes occur.

The Futures Literacy Framework (Miller, 2018, p. 23) offers a structure to assess different types of (anticipatory) assumptions depending on *what* kind of future is in focus and on how that future is explored: *forecasting* and *destiny* refer to assumptions in closed systems; *creative reform* and *self-improvement* in semi-open systems with a focus on planning, and *strategic thinking* and *wisdom–Tao–being* in semi-open systems with a focus on emergence.

Bergheim (2023) clusters 500 assumptions revealed in actual futures processes into eighteen categories, which contain assumptions about the purpose of a futures process, about human nature, the depth of the issue under investigation, the links to neighbouring issues, obstacles to change, conditions of change, capabilities required, the rules in place, relevant solutions, trade-offs, actors, and resources.

Assumptions are often not directly observable, remaining outside of conscious reflection unless deliberately surfaced. Futures work provides a wide range of methods for revealing and categorizing assumptions. In a Futures Literacy Laboratory, an intermediate step to reveal assumptions is to ask participants to share their images of probable and desirable futures of a certain topic. Participants tend to be more open and share ideas, including their hopes and fears, if they are asked to imagine a topic at a later point in time.

Once these images of the future are revealed, participants can explore the deeper significances in them, examining where in the past these images may have arisen, or why they describe a certain image or model. These explorations generate deeper insights.

Terminologists: Stefan Bergheim and Irianna Lianaki Dedouli

This English text is the original entry for this term. No LLM model has been used in the generation of this entry.

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