FUTURES GLOSSARY

Anticipation

English

1. Futures definition

Anticipation is a property of a system that incorporates models, representations, or anticipatory assumptions of possible later states, conditions, or relations into its present functioning. This property influences and guides perception, meaning-making, and action in the present. Human anticipation also involves imagination, internal models, and assumptions about future possibilities. Through anticipation, futures-oriented models, representations, or assumptions can operate as causal factors in present behaviour.

2. General definitions

In the futures field, clarifying when and how the term anticipation is used is critical. The first definition of anticipation in most dictionaries is very similar to the one proposed in this glossary: Anticipation refers to “a prior action that takes into account or forestalls a later action” and a “visualization of a future event or state“ (Merriam-Webster, n.d.-a). Similarly, the term refers to “the fact of seeing that something might happen in the future and perhaps doing something about it now” or “taking or doing something before the proper time” (Oxford Advanced Learners, n.d.). In the same sense, anticipation is “the act of anticipating, taking up, placing, or considering something beforehand, or before the proper time in natural order” (Wiktionary English, n.d.-a).

The second definition of anticipation used in many dictionaries differs from the use in this glossary and in futures work. In this case, anticipation refers to “a feeling of excitement about something that is going to happen” (Oxford Advanced Learners, n.d.), a “pleasurable expectation” (Merriam-Webster, n.d.-a), or “the eagerness associated with waiting for something to occur” (Wiktionary English, n.d.-a), which is likely positive. Definitions of anticipation based on pleasure and eagerness are not the meanings used in this glossary and are, in fact, contradictory to futures usage.

In the futures field itself, several definitions of anticipation are similar to the one used in this glossary. For example, the definition “anticipation covers all efforts to 'know the future'” (Forward Thinking Platform, 2014, p. 4) is similar, but somewhat too narrow because of the use of the singular “future” and because

anticipation is not primarily about knowing “the future”, but about the models, assumptions, and purposes through which the later-than-now is incorporated into present perception, meaning-making, and action.

The Observatory of Public Sector Innovation (OPSI), part of the Organisation for Economic Co-operation and Development (OECD), defines anticipation as “the act of creating actionable knowledge about the future [by] drawing on the existing contextual factors, values and worldviews, assumptions, and range of emerging developments” (2024, p. 67). While aligning somewhat with this glossary’s futures interpretation, this interpretation focuses too strongly on actionable knowledge about a future object rather than on the anticipatory models and assumptions that shape present perception and action.

The Global Foresight Network (GFN) successfully links and distinguishes anticipation and foresight by defining anticipation as “the preparation, planning and execution of actions based on informed expectations of the future(s), i.e., on (strategic) foresight” (Global Foresight Network, n.d.). This definition is in line with anticipation always being linked to action in Rosen and Louie’s theory of relational biology (Louie, 2019, p. 11), which includes the theory of anticipation. But the GFN sees anticipation as “more comprehensive than foresight and includes the latter […] if you have foresight but do nothing, you do not anticipate.” Our understanding is similar: foresight activities are usually linked to action. A key distinction, however, is not simply whether action follows foresight activities, but which anticipatory systems, models, assumptions, and purposes are mobilized: some anticipatory processes are oriented to planning and preparation, while others are oriented to perceiving and making sense of novelty and emergence. In this glossary, foresight is the systematic exploration and analysis of possible futures while anticipation is a general property of a system, whether human or not.

Poli proposes a different definition than those presented above. He sees anticipation as the third level of futures studies, after forecast and foresight. He posits that anticipation is “grounded on the outcomes resulting from forecast and foresight models and aims at implementing them into decisions and actions” (Poli, 2017, p. 67). By contrast, we would argue that forecast and foresight also employ anticipation when they are linked to actions, as they often are. While forecast and foresight are practices that mobilize anticipation under particular assumptions and for particular purposes, they do not exhaust anticipation as a general systemic property.

3. Etymology

The term anticipation is rooted in Latin but can be traced back to ancient Greek. In Latin, the verb *anticipare* comes from *ante-* (before or in front of) and *cipare* (from *capere*, to take) (Merriam-Webster, n.d.-a). The noun is *anticipātiō* (a fore-taking), which is a one-to-one translation of ancient Greek *prolepsis,* which consists of *pro-* (before) and *lambáno* (to receive), meaning *preconception*, mental picture, or taking

beforehand (Wiktionary English, n.d.-b). For comparison, the prepositional prefix *pro-* also appears in *prospection*, from Latin *prospicere,* where it is combined with *spicere,* to look or see. The word *proactive* links the prefix *pro-* to *activity*.

Similarly, in literature, *prolepsis* denotes the representation of a future event as if already present, "a figure of speech in which a future act or development is represented as if already accomplished or existing" (The Britannica Dictionary, n.d.).

4. Field of terms

The main contrast to anticipation is *reaction*: responding to something after it has occurred, often within a linear cause-and-effect frame.

The important terms predict, expect, and foresight lie in the vicinity of anticipation but are different. Because anticipation is a property of systems and therefore is sometimes entailed by and entails the meaning of these aforementioned terms, distinguishing these terms clearly is critical.

First, to *predict* in the original definition simply means to "say something before". In present general use, predict is often equated to *forecast*, which refers to model-based calculations by experts using data and usually includes statements about probabilities or likelihoods, as in a "weather forecast". A *forecast* is an estimate or projection of a future event or condition based on analysis of past and present data. Etymologically, forecast stems from the old English *fore-* (as in before) and *cast* (to move something forward, like casting a net). A forecast starts in the present and aims towards estimating future conditions, while anticipation brings representations of later-than-now into the present.

Second, to *expect* comes from Latin *exspectare,* consisting of *ex-* (outside) and *spectare* (to look), meaning to look outside. In today's use, to expect means to consider something as probable, certain, or necessary (Merriam-Webster, n.d.-b). The German equivalent *er-warten* indicates that you can wait for something to happen. *Expectation* is narrower than anticipation because it usually concerns what is considered probable, certain, or likely. Anticipation may also make visible and diversify the models and assumptions through which novelty, emergence, and present action are approached. Therefore, anticipation should not be used interchangeably with expectation.

Third, *foresight,* as defined in this glossary, is the systematic exploration and analysis of possible futures to better prepare for change. By contrast, anticipation is a property found in all living anticipatory systems and can be instantiated collectively in social systems through shared models, assumptions, and practices.

5. Theoretical foundations

The understandings of the term anticipation in this glossary stem from relational biology, from which the theory of anticipation was developed. The foundational book, *Anticipatory Systems - Philosophical, Mathematical and Methodological Foundations* (Rosen, 2012), states on page 8: “An anticipatory behavior is one in which a change of state in the present occurs as a function of some predicted future state, and that the agency through which the prediction is made must be, in the broadest sense, a model.” On page 7, Rosen provides an example of anticipation: When “I see a bear appear on the path ahead of me", my internal model uses the stimulus of the sight of the bear to generate in faster-than-real time a variety of unpleasant predictions, and I act accordingly by retreating.

Rosen’s Ph. D. student, Aloisius Louie, provides an even clearer definition of an anticipatory system, consisting of two conditions: "A natural system is an anticipatory system if (i) it contains an internal predictive model of itself and its environment, and (ii) in accordance with the model’s predictions, antecedent actions are taken" (Louie, 2019, p. 11). In other words, a predictive model exists in the sense that it generates statements about a later instant and is also linked to earlier or antecedent (from Latin *ante-* (before) and *cēdō* (to go)) action.

In line with Louie’s definition of anticipatory systems, Miller (2018, p. 20) defines anticipation as "the capacity of an organism to incorporate the later-than-now into its functioning in ways that are relevant." Miller’s distinctive contribution is to connect Rosen’s systemic insight with conscious human anticipation at the bio-cognitive-social level: imagination, language, meaning-making, social learning, and collective inquiry. However, because “capacity” usually refers to the potential of holding or storing something, such as water or electricity, we use “property” in line with Louie’s usage of the term (2019) in this glossary. To work with conscious human anticipation, attention to anticipatory assumptions is critical because such assumptions can act as filters or structuring conditions that orient what is perceived as relevant, possible, or impossible, thus shaping the range of present choices or actions.

The property of anticipation allows a rigorous reconsideration of the fourth Aristotelian cause, *aition,* or explanation, which has long been put aside by science. In addition to the first three causes (material, formal (form, pattern, design), and efficient (agent, processor)), Aristotle posited a fourth and final cause, which refers to the end, or purpose, toward which a thing naturally develops. This final cause marks the difference between simple (in Rosen’s definition) and complex systems: “Complex systems, unlike simple ones, admit a category of final causation, or anticipation, in a perfectly rigorous and nonmystical way" (Rosen, 1985, p. 166). The theory and practice of anticipation also go beyond Newtonian linear cause-and-effect thinking. This thinking is rooted in “assumptions regarding linear time, efficient causality, and the predictive aims of science” (Gantt & Aguirre, 2026) from the past to the present as the only acceptable cause. Anticipation allows a second influence: "An anticipatory system is a system whose current state is determined not only by a past state, but also by possible future states" (Nadin, 2012, p. xxxiv).

6. Use in practice

Futures work which is informed by Rosen and Louie's relational biology extends the sense of anticipation from an intuitive and linguistic "fore-taking" to a systemic process by which models and images of later-than-now possibilities are incorporated into present cognition, valuation, and behaviour. In human and social contexts, anticipation is culturally situated and can be cultivated individually and collectively through practices that make anticipatory assumptions explicit, diverse, and open to revision. One influential approach, the Futures Literacy Framework (FLF) (Miller, 2018), is particularly concerned with models of the present and the anticipatory assumptions that humans use when imagining the future, because these assumptions shape what becomes perceptible, meaningful, and actionable in the present.

This literacy-based framework distinguishes different anticipatory systems and assumptions in order to foster diverse approaches to making uses of the future visible. Some uses of anticipation are oriented to preparedness, planning, and goal achievement (Anticipation for the Future, AfF). Other uses are oriented to perceiving and making sense of novelty and emergence (Anticipation for Emergence, AfE), and to generating new questions and considerations rather than converging too quickly on solutions. The practical stake in the FLF is the diversification of individual and collective anticipatory assumptions to expand sense-making and agency in the present, without premature closure to possibilities. In this sense, Futures Literacy provides a bridge between the general theory of anticipatory systems and the cultivation of human anticipatory activities in bio-cognitive-social contexts, which are usually complex.

In practice, making one's own models and anticipatory assumptions visible and encountering the models and assumptions of other participants during futures work is an exercise in individual and collective reflection. Human imagination, creativity, and the use of language for communication allow for a wide spectrum of futures and of activities which allow for engagement with participants' models in futures activities.

When the focus of activities in futures work is on innovation, novelty, or emergence, then experimenting with unfamiliar models and anticipatory assumptions is helpful for broadening perception and expanding the range of possible choices and actions in the present. In activating AfE, the focus shifts from the prediction and planning modes of AfF to an epistemic and practical inquiry into how humans and social systems relate to the not-yet, and how knowledge, meaning, choice, and action are co-constituted through those examined relations. Recent work on responsible anticipation, for example, foregrounds the ethical and reflexive dimensions of how anticipatory assumptions shape problem framing, the construction of alternatives, and present action (Garrido, 2026).

Terminologists: Lydia Garrido and Stefan Bergheim

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

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