A STUDY OF POSSIBLE FUTURES

Futures' 116th Dream

Objective Possibility, Heidelberg 1906, and the Open Future



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A sailor lands

Close your eyes. You are in a workshop. There is coffee, there are sticky notes, there is a two-by-two matrix on the wall. Somebody stands up and says the sentence that opens every second foresight exercise I have attended: "The future is open."

Nobody objects. Why would anyone? It sounds true. It also sounds like the reason we are all in the room. If the future were closed, the coffee would be wasted.

Now ask one question. Open how?

Open because we do not know what will happen? Or open because the world has not yet settled what will happen? These are two different things. The first is about us. The second is about the world. The room, I suspect, will give you both answers, sometimes from the same person, sometimes in the same sentence.

In "Bob Dylan's 115th Dream" (Dylan, 1965) a sailor reaches a new continent, names it on the spot, starts writing up deeds and runs into one absurd event after another. Everything is confused, and the sailor is certain all the way. At the end, when the sailor is leaving, three ships come in, and their captain is Columbus. The one who arrives last in the story came, in history, centuries earlier than the sailor. The dream messes the timeline on purpose.

This is the situation of futures studies with the concept of possibility. The field lands, names the land *the open future*, and builds forts on it. Columbus arrives later in the field's story, but

in history the ships were there long before. They came from Freiburg in 1888 and from Heidelberg in 1906.

Let me state the claim plainly at the outset. When futures studies says that the future is open, it means two different things and moves between them without noticing: open because we do not know, and open because the world has not decided. Neither is the right notion. The right notion was worked out in Freiburg and Heidelberg two generations before the field existed. It is *objective possibility*: about the world, but always relative to a description. Read with it, "the future is open" turns out to be an incomplete sentence. The field's most repeated sentence is missing its most important part.

Let me also be clear about what I am not saying. I am not saying that scenarios are useless. They are not. I am not saying that the founders of scenario practice read Weber, or should have; whether there is a line from Heidelberg to RAND makes no conceptual difference, and I make no claim about it. Nor is this an essay about counterfactual reasoning as the engine of scenarios. That is another story. The claim here is narrower and, I hope, more annoying: the field has been certain about its ground concept and confused about its logic, and the logic was available all along.

Open, but how?

The canon is clear that the future is not one. Amara (1981) gave the field its trinity of possible, probable and preferable futures. Bell (1997) built the foundations of the field on the point that the future does not yet exist, so that there are no facts about it to be known, only possibilities and images. De Jouvenel (1967) put it more elegantly: the past is where facts are, the future is where will and power can still act. In the scenario tradition, Wack (1985) and later Schwartz (1991) split the world in front of the planner into *predetermined elements* and *uncertainties*.

The present is not clearer. Aicardi, Mahfoud and Rose (2025), writing on anticipation in the Human Brain Project, say two things on the same pages. Foresight explores multiple possible futures under uncertainty. And anticipation should act while alternative pathways remain open. The first sentence is about us. The second is about the world. Both are reasonable. They are not the same sentence.

So there are two readings of *open*, and the field holds both.

(A) The future is open because we do not know it.

Here openness is a polite name for ignorance. Better knowledge would close it.

(B) The future is open because the world has not settled it.

Here openness is a fact about the world. It would be there even for a perfect knower.

Some futures studies texts say (A). Some say (B). As far as I read them, Bell and de Jouvenel lean towards (B), while talk of uncertainty leans towards (A). I do not claim the field is one confused person. It is many people, some in one camp, some in the other, and some in both within one paper.

And look at the most famous distinction in scenario practice. A *predetermined element* is something the world has already settled. An *uncertainty* is something we do not know. One half of the distinction is about the world, the other half is about the head. Both camps sleep in one bed, and the planner moves from one side to the other without noticing that the floor has changed.

Does it matter? Rarely somebody asks. A tiny case shows that it does. Toss a coin and hide it under a cup. For you the outcome is open. For the world it is settled. That is (A) without (B). Notice that nobody runs a scenario workshop on a coin under a cup. Why not? Because what the field wants from openness is room to act: the future as the place where, in de Jouvenel's terms, will and power still work. That is (B). However, the reason the field most often gives

for its work is uncertainty, and that is (A). Uncertainty is the alibi, agency is the promise, and the alibi does not cover the promise. Ignorance gives no room to act. It only gives room to be surprised.

And this is the dream: certain that the future is open, confused about where the openness is.

Freiburg 1888, Heidelberg 1906

Johannes von Kries was a physiologist in Freiburg, a student of the senses, who also wrote a book on the principles of probability (von Kries, 1886) and an article on the concept of objective possibility (von Kries, 1888). The problem of von Kries was the die. A die is a perfectly physical thing. Every throw is fixed by the hand, the table and the laws of mechanics. Why then does each face come up with a stable frequency? The answer of von Kries was the *Spielraum*, the range of conditions. If you fix only the general features of the situation, the conditions that lead to each face are cut into many tiny slices of roughly equal size, and so each face is possible to the same degree. Possibility is about ranges of conditions left open once some conditions are held fixed and others are thought of only in general terms. The idea went into legal theory as the doctrine of adequate causation, and from there, among other routes, to the historians.

Max Weber took it over in Heidelberg in "Critical Studies in the Logic of the Cultural Sciences" (Weber, 1906/1949). The English edition of 1949 dates the essay 1905 in its foreword, but it appeared in volume 22 of the *Archiv für Sozialwissenschaft und Sozialpolitik* in 1906. Even the timeline of the timeline is confused.

The second part of the essay, on objective possibility and adequate causation, makes four points that matter here (Weber, 1906/1949, pp. 164–188; see also Ringer, 1997).

(i) A judgement of objective possibility is not an expression of ignorance or incomplete knowledge.

(ii) It presupposes known empirical rules, knowledge of how things in general tend to go.

(iii) It requires isolations and generalisations: some conditions are held fixed, others are taken only in general terms.

(iv) It comes in degrees. Objective possibility is an analogue, with important differences, of the kind of probability determined from frequencies (p. 181).

Notice point (i). Weber says in so many words that a possibility judgement is not a report of ignorance. Camp (A) is told no. Then notice points (ii) and (iii). The judgement depends on rules that we know and on conditions that we choose to fix. Camp (B) is told no as well, or rather: not so fast.

Weber's famous example is Marathon, and what the known rules left open for Greek culture had the battle gone the other way. I leave the battle where it is. What matters is the category: a possibility that is objective, rule-bound, relative to what is held fixed, and graded.

Now the timeline. Von Kries in 1888. Weber in 1906. Kahn and Wiener (1967) give scenarios their famous form some sixty years later, Wack (1985) makes them a planning practice at Shell, and the field's own histories and typologies of scenario techniques (Bradfield et al., 2005; Börjeson et al., 2006) start, for the most part, from RAND and Shell. As far as I can see, the 1906 essay does not appear in them. And philosophy did not forget. Strevens (2003) rebuilt the range idea of von Kries to explain why deterministic systems, from dice to gases to ecosystems, give stable probabilities. Freiburg, Heidelberg, Santa Monica, London, and then von Kries again, in new clothes. Futures studies is on the boat the whole time, the only passenger who never read the passenger list.

Between the head and the world

Here is the point of the essay. Weber's possibility belongs to neither camp.

It is objective. It is about the world, not about a feeling of not knowing. But it is relative. It is relative to what is held fixed and to which rules are known. Openness is not in the head. Nor is it in the world simpliciter. It is in the world under a description.

A tiny example. Will it rain on the Turku market square on Midsummer Day 2040? Under the description “Turku, late June, the climate as we know it”, the range is wide. Rain is a serious possibility, and it has a rough degree. Add the pressure charts of the day before, and the range shrinks. Each of these possibility statements is true. None of them is a confession of ignorance. None of them says that the weather has not yet decided; the weather may well be deterministic, and the possibility judgement does not care. Each reports what the world leaves open given these conditions and these rules.

Now go back to the coin under the cup. Under a description that fixes the toss, the range is closed: one face. Under a description that takes the toss only in general terms, heads and tails are both open, each to about one half. Both statements are true, and both are objective. What camp (A) called “open for you” was never about you. It was open under a description that leaves the toss general. What camp (B) called “settled in the world” was settled under a description that fixes the toss. The two camps were not arguing about the coin. They were arguing about which description is the real one, and neither noticed that a description had been chosen.

So each camp is certain of half of something. Camp (A) is right that the judgement depends on what we know: on the rules we have and on the conditions we choose to fix. Camp (B) is right that what the judgement reports is a feature of the world: how the world’s ranges are cut. The quarrel is a false dilemma, and it was cleared away in Freiburg and Heidelberg before the quarrel began.

This is not an antique. Contemporary philosophy of science has walked to the same place from other directions. Massimi (2022) argues that scientific knowledge is always produced from a perspective, a historically situated practice with its own models, instruments and standards, and that this does not make it less realist. On Massimi's account, perspectival models are used to explore what is possible, and they give modal knowledge: knowledge of possibilities that is had from somewhere and is still about the world. Read with Weber, the perspective is the description. Norton (2021) argues that there is no universal form that licenses inductive inference; what licenses an inference are material facts about the domain in which it is made. Read with Weber, the material facts are the known empirical rules. A possibility judgement about the future is warranted, if at all, by facts about how that part of the world works. Not by its format. A two-by-two matrix licenses nothing.

Even Wack's pair can be rescued. A predetermined element is what stays fixed under the description. An uncertainty is a range left open under it. Wack half had it. What is missing is the description itself: fixed by whom, under which rules, and with which degree of openness left.

What the dreamer should ask

Three things follow. None of them needs a new framework, and the field has enough of those.

(1) "The future is open" is an incomplete sentence.

Open relative to what? A scenario set that does not say what it holds fixed and which rules it relies on has not stated its possibility claim. It has only announced that it has one.

(2) Degrees come back.

If possibility rests on rules and ranges, some possibilities are wider than others. The slogan "plausible, not probable" is often a way of not saying how wide. It is true that uncertainties

cannot always be reduced to probabilities. Weber agreed: degrees cannot always be counted, and objective possibility differs from frequencies. But Weber did not pretend the degrees were absent. A possibility without degree is a postcard, not a map.

(3) The warrant is material.

What makes a possibility claim good is what the claim rests on in the domain, not the method that produced it, the number of participants in the workshop or the quality of the sticky notes. This is a dull conclusion. It is also the conclusion that lets a scenario be wrong. A possibility judgement with stated conditions and stated rules fails when the rules were not the rules, or when what it held fixed was not fixed. Foresight is strangely hard to fail at. Here is one honest way to fail, and that is a virtue, not a threat.

Limits, and this essay's own possibility

Weber wrote about the past. Weber used objective possibility to judge the significance of what had happened. Moving it to the future is my move, not Weber's, and something changes on the way.

For the futures of knowledge there is Popper (1957). We cannot know today what we will know tomorrow, so the rules themselves will change, and a description built on today's rules cannot hold fixed the growth of knowledge. Stanford (2006) adds a sharper edge from the history of science: the alternatives that later replaced our best theories were usually ones nobody had conceived at the time. A description cannot fix what nobody has conceived. Weber's logic is a good logic for futures, except where the future is a future of knowledge, because there the description itself drifts. That is a limit, not a refutation.

And Weber looked forward too. In the same essay Weber grants that only the future conclusively decides the causal significance of the facts of the present (Weber, 1906/1949, p. 158). The logic of the past was written with one eye on the future.

This essay should also state its own possibility judgement. It holds fixed a reading of a handful of canonical and recent texts, under the rules of philosophy of science as I know them. Under a wider description, a broader reading of the field, the range of what futures studies “really” thinks about openness may be wider than I allow here. I would be glad to be shown that range.

Columbus, again

Back to the dream. The sailor names the land, writes deeds, ends up in jail and, notice, decides the way back by flipping a coin. A coin, again. At the end Columbus sails in, and the sailor only wishes the captain luck.

This is the 116th dream because it is not the first. Every few years futures studies lands on the open future again, names it again and writes new deeds for it: a new cone, a new typology, a new word for the space of the possible. Columbus keeps arriving from 1906. We keep wishing the captain luck and sailing on.

The land was mapped long ago. Open, yes. Under a description.

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