

Towards a clarification of probability, possibility and plausibility: how semantics could help futures practice to improve

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Abstract

Purpose – *The purpose of this paper is to discuss the clarification of three qualifiers “probable”, “possible” and “plausible”, which are often used interchangeably in foresight and futures studies practice, but which could obtain added value through a careful distinction. In general, it shows the importance of language as the main tool for futures practitioners.*

Design/methodology/approach – *Employs semantic and conceptual research.*

Findings – *Distinction of the three qualifiers has not only semantic importance; it also leads to a better conception of what futures practice could work towards.*

Practical implications – *Futures practitioners should more carefully apply their vocabulary, since it is their main tool. By carefully distinguishing probability, possibility and plausibility, a better focus on the purpose of futures practice becomes attainable.*

Originality/value – *Very little effort is spent on the working of language in futures studies. Besides glossaries, there is very little work done in sharpening this major tool. The semantic confusion that reigns within the foresight/futures studies community is mainly due to a lack of involvement in this clarification process. Applied semantics is often considered as burdensome, whereas it should be at the core of how the future is being conceptualized.*

Keywords *Probability theory, Semantics, Language*

Paper type *Conceptual paper*

Introduction

When speaking about the future, practitioners who apply futures methodologies, like scenario building, often add qualifications to the predicates they make in order to emphasize their relevance or importance. Three of these qualifications, which are commonly used, are “probability”, “possibility” and “plausibility”. Hence, we speak of futures that are probable, possible or plausible, according to some set of mostly implicit criteria. However, in practice, these notions, more often than not, rather lead to less understanding than to more, and questions are raised for clarification. Is a future that is plausible better than a future that is only possible? Is a future that is plausible also a future that is probable? Can one future be more plausible than another, and what does that mean? Should we consider any future we can conceive as potentially possible by the simple fact that we have conceived it? In response to these questions, new notions are added to the spectrum, but we could seriously doubt whether they resolve the problems they were supposed to enlighten. For example, we do not only speak of “possible” futures, but also refer to “equally possible” futures, emphasizing the idea that all futures are in some way conceivable, but implicitly claiming that some futures could be more possible than others. Whether this makes sense is one of the things we will try to analyze.

Within this jungle of qualifiers, it seems useful to attempt some clarification, which is the aim of this note. However, clarification should not be sought in stringent definitions: clarifications cannot be provided by glossaries. Real clarifications should give readers (in our case futures

method practitioners) a sense of the distinctions they could make between different qualifiers, notwithstanding the nametag they would add to them. So, clarification is not about claiming that red is red and blue is blue (this would be a matter of convention only), but to explain how a distinction between red and blue could be made and why this is useful when applying these qualifiers. Furthermore, the sciences and practices that rely heavily on a living vocabulary, among them foresight/futures studies, are not likely to be captured by convention: their advancement relies on continuous (re)negotiation of distinction.

With this in mind, we would like to combine two approaches for reaching towards distinction through clarification. The first and most obvious step is to make a distinction between the three main qualifiers “probability”, “possibility” and “plausibility” based on a discussion of what is to be found at the core of each of them. More important, however, is the second approach through which we will discuss each of these qualifiers, in which we will focus on their internal variability. Instead of wondering whether something is probable and, for example, not possible, we are dealing here with questions concerning the different types of probability or possibility.

Towards an initial distinction between probable, possible and plausible

The first step we have to take towards some kind of a distinction is to make sure that a distinction can be made between “probable”, “possible” and “plausible”. This is not necessarily a trivial step. Although intuitively we would fully acknowledge a difference, the “imprecise” uses in everyday language have led to a situation in which our three qualifiers can (almost) be used interchangeably. One could look at the sky and claim that it is probably going to rain, that is possibly going to rain and that it is plausibly going to rain, without any real distinction between the three: you will not leave the house without an umbrella. So in many everyday uses, a probable event is a possible event is a plausible event. Although we could be satisfied with this application as synonyms, in futures-related practice we do make distinctions between them, or at least, we claim that these distinctions exist and are relevant. For example, many futurists may say that scenarios have to be both possible and plausible, definitely requesting two different quality checks. If that is so, and this is indeed our starting point, the key issue is to make clear what the distinction between the qualifiers is, and in this case, how we can do a possibility check and a plausibility check, and what that would mean for the type of claims we could make. In other words: if we add qualifiers to a futures-related work, then we should at least be able to explain what they mean and why we use them.

The first question we will have to ask is therefore what meanings have been attached to the three concepts “probable”, “possible” and “plausible”. We will soon discover that most of the confusion is due to the fact that the differences between them are rather subtle, but certainly not irrelevant. This will help us understand how we could use these notions in a distinctive way. A second question that will have to be answered is whether we deal with absolute or relative notions. Whereas nobody will be shocked when claiming that some event is more probable than some other event, we will at least frown when one claims that some event is more possible than some other. This question is relevant, because it will help us to understand the differences between the three qualifiers. A last question to be addressed deals with the practical implications of the qualifiers. Moving away from a purely semantic perspective, it is helpful to discuss what it means to use a particular qualifier in a practical context. For example, we would like to know what we really test when assessing the plausibility of a set of scenarios.

With these three questions in mind, we will discuss the probable, the possible and the plausible in the three subsequent paragraphs. We will clarify each of the qualifiers according to its principle uses and definitions. Furthermore, we will clarify each of them more in-depth showing the extent to which distinctions could and should be made at the inside. Finally, we will conclude this note with a wrap-up of the distinctive elements, followed by some synthesizing remarks on how to make sure that confusion in vocabulary can be replaced by the discussion and evolution of concepts using distinction through clarification as our main tool.

The probable

The probable (and its derivatives probable (adjective) and probability) can be traced back to the late fourteenth century. Etymologically, it links back to “that may be proved”, and although this meaning has gone out of use, the probable still refers in some way to something that “has an appearance of truth”. So we would not be surprised to see something probable materialize, whereas the advent of something improbable would trigger our incredulity. In other words: the probable is something that has more chances to exist than not to exist (after Goblot, 1920)[1]. There are two major ways to apply the notion of the probable, one mathematic (or scientific) and the other one literary (and closely related to everyday use). And unfortunately, both are blended when we are systematically discussing future events.

Probability as a mathematical concept

Probability is first and foremost a mathematical notion, where in the absence of certainty, systems can successfully be described through chance mechanisms. An event is probable when it occurs with a probability p , p being any real number between 0 and 1 (in which 0 is a complete certainty that the event will not occur, and 1 a complete certainty that the event will occur). Probability is closely linked with the die: we can be sure that when someone throws a die, the result will be either one, two, three, four, five or six, but we could never claim with certainty that the next throw will be a six. So probability has to do with uncertainty through chance: the individual event cannot be known, even though the result itself will not come as a surprise. However, the metaphor of the perfect die is rather deluding for understanding probability in an imperfect world. Most probabilities can only be established through empirical data collection and processing, which leads in the most ideal situation to relative frequencies and probability distribution curves, of which the normal distribution – the famous bell-curve – is, well, the most normal.

Whereas repetitive systems are rather easy to describe through the notion of relative frequencies, the concept of probability becomes more problematic when no repetition is available, or only historically contingent data exist while we have to say something about future changes. Probability theory has moved into this area, but at the price of replacing objective probability (obtained due to the repeatability of systems) by subjective probability, which varies from one person to another. In this latter situation, probabilities rely on personal or group utility functions, and one is considered acting rationally when optimizing one's expected utility taking into account the subjective probabilities one attaches to uncertain events. In simpler wording: one behaves rationally when one takes into account an event to the extent in which one considers this event probable (or one would be irrational to put all one's money on a horse of which one thinks it is likely to lose). This approach has successfully been developed in certain contexts (mainly decision-making contexts), and we may wonder to what extent the futures studies domain could make use of it (but this is beyond the scope of this note[2]).

Probability as a literary concept

From subjective probability, it is only a small step to the more literary and everyday uses of the notion of probability. Probabilities are very important elements in everyday life, since there are only too few real certainties on which we can rely. Nevertheless, in everyday life we aptly transform probabilities for practical reasons into certainties. Although we know that there is a chance that our plane will crash, the fact is that there is a very high probability that it will not, and therefore we change the probability into a certainty. Nobody will question a statement like, tomorrow I will be in Washington, even though I am currently in Paris and planes do crash. This is why Bertrand De Jouvenel (1964) speaks of sufficient certainties (*certitudes suffisantes*), there where we would expect to speak of high probabilities. As a consequence, in everyday language something that is probable will happen, something that is improbable will not, only acknowledging that we should not be surprised or worried if the inverse would happen (this acknowledgement is of course rather difficult when dealing with plane crashes or nuclear accidents). Hence, probability is a disclaimer for a certainty that does not materialize.

In literary language, the probable has little to do with calculated relative frequencies, but with some (experience-based) intuition of what is likely to happen. Instead of probability, the concept of likeliness is therefore a much more manageable conception, since it allows us to mobilize other types of knowledge than only explicit historical empirical knowledge. The use of likeliness is in some way less ambitious: where probability refers to quantifiable claims (even in the case of subjective probability), likeliness refers to “the feeling” that the event will occur. Hence, the advantage of likeliness is that it provides us with a sense of probability, without carrying the heavy charges of the latter. Whereas it is difficult to claim that something is more probable than something else without reaching to quantification of these probabilities, we can easily defend that some event is more “likely” than some other. In some way, “likeliness” offers the possibility of qualitative and argumentative ranking, which is much more problematic with probabilities. We could say that “likeliness” is really a qualifier (comparable to possibility and plausibility, as we will see later), whereas probability is essentially a quantifier.

Absoluteness and relativeness

This leads us to a short discussion of the absoluteness or relativeness of probabilities. As we have seen, from a traditional mathematical point-of-view, probabilities offer a sense of absoluteness: we can establish the probability of some future event irrespective of any other future event. A probability of 0.5 means that on average the event will occur in 50 percent of the cases, and will not occur in the other 50 percent. Again, we cannot make any more precise inference on whether the next case will be the event or not.

However, although probability offers a sense of objectivity, psychologists like Dawes (1988) have aptly shown, that we should also take into account the way we react to statements about probability. We read probabilities within their contexts, and these contexts are vulnerable to framing effects. Our behavior will be risk averse, risk neutral or risk prone depending on the way we read the probabilities, not on the probabilities themselves. Dawes argues that identical choice situations give rise to different choices by the same set of people when framed in a positive way or in a negative way. For example, someone who is diagnosed for cancer may have a survival rate of 50 percent when treated with radiation. When he/she is exposed to the choice to undergo treatment, he/she will be more risk taking when the problem is framed as “you have a 50 percent chance to survive” than when the problem is framed as “you have a 50 percent chance to die”, even though these are obviously perfectly equal alternatives.

Whereas probability is mainly an absolute notion, this is not the case with “likeliness”. Since the latter cannot be quantified, its use is limited to a relative comparison. When an event is more likely than its opposite non-event, we cannot say how much more likely the event will be. Relative comparison limits the likeliness criterion to ordinal ranking. Again, the ambition of likeliness is much more limited than the ambition of probability. In that sense, we should also show prudence while deploying claims about futures that are “equally probable”. In a mathematical sense, this would mean that future A and future B have the same probability p . However, when we design four different futures with equal probability, this does not mean that we can attach a 0.25 probability to each of them. This would only be true in the case where the four futures are the only futures possible. Since this is almost never the case, our four different futures are only a selected, often contrasting, sample of all possible futures. Hence, “equally probable” can only be understood as a metaphor for “equally indifferent”: we do not make a difference between the possible futures in terms of probability. In essence, equal probability should be read as probabilistically indifferent, or, in likeliness terms, all futures are equally likely.

The probable in the domain of futures studies

The probable is by default linked to the future: any genuine probability statement refers to something that will happen[3]. The link between probability theory and more contemporary futures-related research can be well illustrated by the title Bertrand de Jouvenel has chosen for his treatise on the future, *The Art of Conjecture* (De Jouvenel, 1964, for the original French edition). With this title he referred unambiguously and explicitly to Jacques (Jakob) Bernoulli's *Ars Conjectandi* (Bernoulli, 1713, literally *The Art of Conjecturing*), one of the founding works on

classic probability theory. But this homage should not be misunderstood, adds De Jouvenel. Whereas Bernoulli aimed at adding probabilities to events, the tasks of futures studies is to create possible futures for which we should identify the likeliness (*futur vraisemblable*) through an imaginative and intellectual endeavor (De Jouvenel, 1964, pp. 30-1). So the emphasis of a futures-related study should be on the transparent construction of conjectures to be exposed to intellectual critique, and not on the search for the probable itself.

Hence, the domain of futures studies arose initially as an answer to limits of probability reasoning for long-term thinking and decision making. Bertrand de Jouvenel emphasized throughout his work that the future could not be conceived along the lines of the probable: what we are dealing with is to uncover and discuss the possible, moving essentially away from what is considered probable. There are three important reasons for this conceptual divorce:

1. We cannot know all possibilities.
2. Each of these possible futures is an accumulation of uncertainties.
3. We are just as interested in probable as in improbable futures.

In that sense, one of De Jouvenel's most important contributions was the coining of the fan (*éventail*) of possible futures, indicating that there are an infinite number of possible futures, of which some of them may be more likely than others, but not for that reason more or less relevant for consideration. It would therefore be unreasonable to attribute probabilities to some of these futures (the ones we select for closer scrutiny), since it is much more likely that none of them will materialize: the future is likely not to be among the futures we have selected. So, since we cannot know all possibilities, it does not make sense to add a probability to some of them.

Probability in a traditional mathematical sense has also very little meaning in the futures domain due to an accumulation of uncertainties (some of which chance-based and usually seen as risks). This accumulation of uncertainties is one of the main characteristics of futures studies or foresight and cannot be dealt with in statistical or mathematical ways, or only to a limited extent. Even if we could add some probabilities to certain events, they would have little relevance when these events are considered in a wider context. Furthermore, one function of futures studies is to study the consequences of very low probability events or events for which probabilities are still beyond meaning, like weak signals and early warnings. For some, it is even the essence of futures studies and foresight to move beyond what is essentially likely and to consider futures that, based on our current criteria flowing from historical experience or evidence, are not so likely at all, while in the meantime knowing that unlikely futures sometimes materialize (see for example, Slaughter, 1995).

However, this does not mean that in the absence of any kind of probability, we are stuck with futures that are in essence "equally probable" (even though this notion has no sense anymore in our context). Both our intuition and practical experience show that not all futures can be considered as such: some futures seem simply more probable than others. As a consequence, in a practical setting, one also wants to know what is likely to happen in order to study (policy-)relevant futures. A possible key to this dilemma – we want to study probable futures among the infinite set of all conceivable futures – is provided through the notion of likeliness, which we introduced earlier. Although this is initially a semantic solution, it helps practitioners to move away from the limits inherent to probability, and to emphasize the relateness of futures thinking. So, within the domain of futures studies, we may wonder whether a particular future is likely, and whether it is more likely than others. This may lead to a ranking of the alternative futures. However, since "likeliness" is a relative qualifier, it cannot accept or reject one single future. Its most important contribution to futures studies practice is that it helps to make likeliness assessments. From there, one can either choose to develop the most likely futures or the most unlikely ones, but this will depend on the ambition of the undertaking, since both choices may lead to potentially valuable output.

The possible

More than its two fellow qualifiers, "possible" is so much an everyday word, that there are many meanings attached to it. Depending on the context, something that is considered

possible can be conceivable, doable, realizable, acceptable, believable, permitted, eventual, likely, etc. Once again this shows that it would be vain to stabilize a vocabulary in an all-encompassing glossary: language simply evolves and develops, and so does meaning. Nevertheless, it is our task to dig into what the qualifier “possible” could add to the understanding of the future.

For an initial distinction, let us return to the die analogy. We are all familiar with the fact that throwing a six is not very probable: there is a 83 percent chance of not throwing a six. But we also know that throwing a six is certainly not impossible, because else there would be no meaning in rolling the dice. This statement could be made much stronger, when saying that if something is improbable then it should by default be possible. As a consequence, probability and possibility belong to different categories and cannot be used interchangeably. From here, we should carefully make a distinction between the two qualifiers.

The possible as a philosophical category

Whereas probability is a more philosophical-mathematical notion, possibility has a strong philosophical-ontological connotation: the possibility of something is closely related to reality, to what can or could exist. Although the possible, or the potentially possible, is at the heart of futures studies, very few authors have reflected on what “the possible” really means. An important exception is the German philosopher Ernst Bloch (1959), for whom the future was a central theme of his intellectual project. For his philosophy of the future – mainly a philosophy of hope – he constructed the basic category “the possible” (*Das Mögliche*), since in his eyes it is not a trivial question to discover what is captured in the domain of what can or could be (*das Kannsein*)[4].

According to Bloch, there is not one concept of the possible: the possible contains four different levels. Hence, there are four different forms of the possible. The first and most inclusive level contains all that is formal possibility[5], that is, all we can think of, no matter whether it is nonsense or contradictory (“he embarked on the ship that had already left”). At this level, all is possible and there is no impossibility we can think of. But the possible is not trivial, the formally possible does not contain all we cannot think of or have not thought of, but in practice the category of the impossible remains empty. Furthermore, things that are possible in thought may remain sterile or lead into the wrong direction. The second level, the factually epistemological possibility, narrows the “all is possible” to those elements of the formally possible, of which we suppose that they are founded or grounded in factual reality. However, the possible does not come with complete or at least sufficient knowledge. Therefore it can only be described in hypothetical terms (the premises are not yet corroborated), or when there is even less certitude, as a *problematique* (the premises are not yet known). If we would have complete knowledge, a predicate would not be considered the possible anymore, because it would lack the required conditionality that is inherent to the possible. Most futures work could be placed at this level.

However, Bloch adds two other levels, the “possibility according to the object” and the “objective real possibility”. At these levels, the possible is not anymore related to the (human) subject, who thinks and who develops knowledge, but at the potential or potentiality of the object and the object-world (in which humans are also seen as objects). The possibility according to the object refers to what is hidden in the structure of an object, which may either be active or passive. In the active sense, the object will develop and evolve due to some inner potential; the passive potentiality contains the conditions of something to become possible, but only through an additional active (human) intervention to make this potentiality become reality. An example of the latter is the crossroads of some historical conditions that make a particular event, war and peace for example, possible.

The objective real possibility is the most metaphysical level of the possible. At this level, the possible is seen as the determinism that is present in the object-world, of which human beings themselves are products. That what exists has been possible, but that does not prejudice all that which does not exist, but could come into existence. In this sense, Bloch pushes us away from the idea that this world is the only world that would potentially be possible. The American economist Kenneth Boulding has formulated this in similar terms,

stating that “not everything that is possible exists” and that “everything that is did not have to be that way” (Boulding, 1992).

The binary possible and the not-yet-possible

Whereas Bloch’s levels may be helpful in distinguishing one “possible” from another, there is one central underlying premise: the possible is in principle a binary qualifier. Just like a light that can either be on or off, and not half-on, a statement is either possible or impossible, but there is nothing in between. In some way, one could claim that there is also something like “conditionally possible”, but in this case the binary qualifier only moves from the possible itself to the condition that makes this possible materialize, which may either occur or not. In that sense, Bloch goes even further, and adds another intermediate concept of the possible, which is the not-yet-possible. This type of future relates mainly to his fourth level, the real-objective possible, and refers to the possible, which is in some proto-phase: the potential is there, but the possible is not yet visible, like a seed frozen in the winter soil.

If we see possibility as a binary qualifier, this also sheds some light on the idea of equally possible futures, and so of one future that would be more possible than another. Since the possible is either there or not, the adjective equal only underscores what was already included in the notion of the “possible”. Since possible is not a relative but an absolute quality, “equally possible futures” is indeed a pleonasm, just as much as white snow or heavy lead. One could even say that it is a false pleonasm, in the sense that “equal” cannot qualify “possible”, because the possible is always binary: either something is possible or it is not, but there is no meaning in claiming that one event is just as possible as some other event. But here style may overrule meaning if it helps to underscore that possibility has no incidence on relative order or objective preferences.

Absolute and contingent impossibility

Although there is a strong distinction between the possible and the impossible, there are different reasons that influence our decision on where to put the watershed. In that respect, we can make a distinction between absolutely impossible statements and contingent impossible statements. Something is absolutely impossible when it violates physical laws. However, very few futures relevant statements come close enough to this question to be seriously considered, and many physical laws are less stringent than we would expect.

Instead, most futures studies relevant claims of impossibility are in essence contingent impossibilities, which relate mainly to the time horizon (it could be possible, but not within the suggested timeframe) or with respect to the means available for the realization of a project (it is impossible, because we cannot do it with our current and prospected means). Contingent impossibilities are not necessarily subjective: they may be based on fair analyses of means-ends relations or of the critical path. But when time horizons become long enough, as we tend to emphasize in futures-related work, contingent impossibilities have to be considered carefully. On the one hand, the claim that something is impossible can often be countered by historical arguments or cases, which have shown that many things have been possible due to unexpected historical convergence or to priorities given to a specific goal (we often forget that there has been no man on the moon since 1972). On the other hand, the claim that something is impossible often hides interesting assumptions about change processes, possibility judgments and one’s position in an organization or in one’s life. The famous Clarke’s rule says, partly in jest, that when an authority at the end of his career claims that something is impossible, then it is likely to become possible soon. The claim that something is impossible may act much more a trigger to prove the inverse than a statement of universal truths.

The possible in the domain of futures studies

For many futurists, the key to futures studies is to identify and develop different alternatives. For Bertrand de Jouvenel this consideration became the starting point of the *futuribles* (a compilation of the French words “futures” and “possibles”). From his perspective, the most important contribution a futures researcher or practitioner could make is to open up the

future and consider many different futures as possible, notwithstanding whether some futures may be more likely than others. Another important contribution has come from Peter Schwartz and the Global Business Network (Schwartz, 1996). The method described by Schwartz is based on a two-by-two matrix in which the two most important and most uncertain independent external variables are crossed. The four scenarios that come out of this exercise have to be considered as “equally possible” (i.e. indifferently possible), for the simple reason that the input variables were highly uncertain and independent. Although the natural tendency is to classify or rank these scenarios into more likely and less likely ones (so adding a probability criterion), this is an erroneous use of the method: each of the four scenarios is simply possible and that is all we can say.

When we claim that something is possible, we admit mainly that something is conceivable. As a consequence, in practical terms, there is little value in the qualification that something is “possible” without clarifying the underlying reasoning. There are very few things that we could consider impossible within the time frame we consider for futures research. The time horizon is always chosen in a way that structural changes could be conceived. Nevertheless, it is a very natural reaction for people to claim that something is impossible. Any practitioner of futures studies or foresight is familiar with this type of early rejection of a certain conjecture. And indeed, as we have seen above, there may be good reasons for this rejection, and it is the task of a futures practitioner to make these visible. Very often the assumptions on which this rejection is based can be challenged within the context of a futures activity (often this is one of the reasons why extreme scenarios are conceived). History has shown us that Berlin Walls do fall, and that the impossible was only historically inconceivable. Since many futurists have aimed stretching our sense of the possible in order to develop a much wider view (*voir large et loain*, according to the French philosopher Gaston Berger), the possible comes very close to what Bloch has named the formally-possible: we consider any future we can think of as potentially possible, unless impossibility is duly established. But if everything is possible, how can we advance? Here, our last qualifier, the plausible, may provide us with several leads.

The plausible

Plausibility is the most problematic qualifier of the three, because it refers to a rather hybrid notion, hovering between probability, likeliness, credibility and being reasonable. Its origins are to be found in the Latin expression *plausibilis*, literally meaning “which deserves being applauded”, but this meaning has become more or less obsolete. In comparison with both probability and possibility, which offer some leads to an objective reality, plausibility is a purely subject-related notion: plausibility cannot exist other than through the fact that it is carried by human reasoning. In other words, something can only be plausible when someone claims it to be.

Whereas the probable and the possible refer essentially to what we could call “knowledge” (the probable offers knowledge about chance and likeliness, the possible offers knowledge about the (potential) reality), the plausible refers to concepts of judgment and conviction, to argument and the process of being convinced. Whereas we could say of a statement that is probable or possible, we would rather speak of a plausible argument or plausible reasoning. Plausibility, therefore, has much to do with how we reason and how we construct a convincing argument than with the actual “truth-value” of a claim. This is exactly what we expect from any good fiction: all may be false, but nevertheless it should be plausible.

The creation of plausible arguments

So the question is not so much to understand what plausibility is, but why we consider some statement plausible and some other not and how a plausible statement can be constructed. Obviously, this question is too large to be answered within the context of this note, but nevertheless it seems both interesting and important to add a couple of elements. In the first place, we are all very familiar with the working of plausibility. It is the dominant factor in story-telling and argumentative deliberation (among which decision making). If you have to convince someone, you may either tell the truth or lie, but the only way to get a message across is to construct an argument that seems sufficiently “true” to be believed, or at least

more true than any of the competing arguments. Much has been written in this respect, from the “how to convince your boss” pop literature to in-depth studies on how we use language to represent reality (see for example, Potter, 1996).

One of the keys to plausibility is to know how we make inferences between a premise and a conclusion. Interestingly, we use different mechanism when we have little foreknowledge or when we are unfamiliar with the subject (so-called blank statements) compared with situations in which we have foreknowledge or when we are familiar with the subject (non-blank statements) (Smith *et al.*, 1993). When we are dealing with blank statements, we reason according to the similarity relation between the premise and the conclusion, according to several tacit rules. For example, if the premise is stronger than the conclusion, we tend to consider the conclusion as true. Or, if the premise is close to the conclusion, we tend to consider the conclusion as true. However, when we are dealing with non-blank statements (that is, we are familiar with the subject), we tend to complement these rather objective rules with more personal judgments about what could be plausible and what not. The truth-value of the statement will less rely on the statement itself, and much more on the way in which it can be reconciled with earlier knowledge and judgments.

What these configurations teach us, is that the structure of the argument may be much more important than the actual content itself, and this is exactly what plausibility is about. Unfortunately, futures practitioners tend to emphasize the plausibility of the substance when assessing their products, whereas the plausibility of a statement of the future is purely discursive, and ignores what is factual and what is speculative.

The plausible is not necessarily possible

It would be interesting to propose the following distinction: everything that is plausible should at least be possible, assuming that the whole of plausible futures is a perfect subset of the whole of possible futures. In that way we should first ask whether a future is possible before asking whether it is plausible. However, this is not the case (unless we take as the whole of possible futures the Bloch’s formally possible futures): a plausible future may very well be factually impossible. The consequence is that we can be inspired by a plausible future that turns out to be sterile in real life or that takes us into the wrong direction. Unfortunately, the human mind has not yet been sufficiently armed to distinguish what is fantastic and what is real, and there is no guarantee that a future that we consider as plausible will have any real implications whatsoever.

Practical uses of plausibility

Nevertheless, it may be helpful to give some practical sense to the concept of plausibility, emphasizing that the plausible should be “reasonable” (i.e. being conceived or accepted by reason), credible or reasonably acceptable. For this we could find different proxies that help us define “reasonableness” in practical terms. In that respect, some authors have tried to specify the plausibility qualifier for more operational uses. Roy Amara (1991), who uses plausibility as a proxy for possibility, proposes for example to test the plausibility of any future on three criteria:

1. Conformity with physical and perhaps also behavioral principles.
2. Internal consistency.
3. Reasonability.

These criteria are fair enough, but nearing the end of our reflection, this does not seem to help us much ahead. In the end, the most important plausibility check should come from simply considering whether some particular future is felt as being plausible by an informed audience.

Furthermore it may be interesting to figure out for what reasons or underlying reasoning a future is considered plausible or not. It is important to emphasize here that this question is at a different level than the “possible”. When looking for plausibility, we are exclusively dealing with the structure of the argument. As a consequence, in a practical setting the objective

should be to develop futures that are all considered plausible: the stories these futures tell should be developed in such a way that they can convince. When working with a set of alternative futures a recurrent problem is that some are more convincingly constructed than others, and as a consequence we immediately reject the non-plausible futures. The real challenge of futures practitioners is to develop futures that are indeed “equally plausible” but sensibly different.

Conclusion

Having gone wide into different directions, we need to bring our findings down to some operational conclusions. It is tempting to “resolve” our problem by rounding up with some definitions. After all things we have been discussing, it should be clear that no definitions could do the job. Nevertheless, it is possible to synthesize our clarification process by summing up the most important elements of our three qualifiers, emphasizing the key ideas and elements that may help to establish a distinction between them. Hence, we propose to synthesize the qualifiers as follows.

Probability refers to concepts of chance and likeliness. A probable future is a future that is more likely than some other future. Likelihood should mainly lead to the ordinal ranking of alternative futures between more likely and less likely. Whether we select likely futures or less likely futures is a matter of study objectives. Any future, whether probable or improbable, is by default a possible future.

Possibility refers to a claim of reality, whether some future either can be or cannot be (and nothing in between). A possible future is considered by default potentially realizable (either passively or actively). Possibility can be challenged for absolute reasons (violation of established laws) or for contingent reasons (lack of realism with respect to the proposed timeframe or available means). The latter consideration is the most relevant for futures studies and may yield important input for futures analysis.

Plausibility refers to the structure of the argument, where truth-value is based on the convincingness, the credibility, of the discourse describing the future. A plausible future is a convincing description of a future, which we can hold true, even though this future itself can be factually fallacious. A future can be plausible without being possible (excluding Bloch's primary level of the formally possible). As a consequence, plausibility cannot be established beyond a personal or social process of negotiation.

Unquestionably, the qualifiers “probable”, “possible” and “plausible” will remain important hurdles in the futures domain, since their eclectic everyday meanings will always interfere with any more systematic meaning. As we have seen these hurdles are partially semantic, but partially they go much deeper to the core of the promise and the mandate of futures studies. Nevertheless, the effort to establish distinctions through clarification may be helpful in giving meaning to these qualifiers, even though it will be impossible, and as we argued also undesirable, to stabilize a definition. Glossaries are of very little use where the evolution of a domain relies on the evolution of meaning, living language being the most important tool for advancement. Hence, precision should not come from definition but from distinction, and what we proposed in this short note was to clarify the distinction between our three notions.

As we have seen, the three qualifiers are all rather closely related, hence, the confusion. But a closer look at each of them has revealed important differences. Although there are good reasons for prudence, probability, possibility and plausibility can still be used as qualifiers for predicates about the future. However, practitioners should do well to understand that these qualifiers do not have any universal value. Therefore, when these are applied, and for that matter any other qualifiers, practitioners have to make sure that the distinction between them is made sufficiently clear to become useful. There is no added value in the claim that some future is plausible (or probable, or possible), if there is no meaning given to plausibility (or probability, or possibility) itself. With this note, we have tried to supply at least some elements that could help develop this meaning, knowing that meaning itself will develop and evolve as well.

Evidently and as a final remark, this consideration is part of a much larger concern, which is the need for quality checks within the domain of futures studies and foresight. Although we

have not dealt with this question in an explicit way, we would like to emphasize that from our point-of-view the evaluation and quality checks cannot be conceived without careful distinction through clarification. In that sense, this note is a contribution to this difficult but fascinating debate.

Notes

1. Goblot (1920) (cited by the *Trésor de la Langue Française* on line) said that: "*Le probable est un possible qui a plus de chances d'être que de ne pas être.*" For the convenience of our discussion, we have avoided the notion of "the possible" in our paraphrasing.
2. Bertrand de Jouvenel (1964, p. 173) was rather skeptical about the subjective probability method, but no doubt there has been interesting progress in the four decades since his remarks, that could be considered.
3. Notwithstanding the fact that in everyday language we could speak of historically probable events, like "Columbus was probably the first European to reach America", as we may not be sure whether the Vikings reached America or not. As we will see later on, we would rather speak of plausibility in this case.
4. This is obviously one of the underlying premises of futures studies. If it would be trivial to know what the future could bring, then there would be much less reason for exploring the future.
5. The English translations for the four categories have been borrowed from Wayne Hudson's (1982) *The Marxist Philosophy of Ernst Bloch*.

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