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The Paradox of Imprecision: Wittgenstein, Quine, and the Limits of Exactness in Language

By Henry Bauer

Introduction

This paper is a technical investigation of a phenomenon that I call “efficient imprecision” in language, which Ludwig Wittgenstein famously took on in the first part of *Philosophical Investigations*. Basically, an expression or term that exhibits what I call “efficient imprecision” is one which ordinary language users employ with near-infallibility, but for which they are unable, in practice or in principle, to readily provide a precise definition. First I will develop a notion of precision relative to a given language. Following this, several different examples will be discussed, each revealing a different aspect of the phenomenon. One type of example consists of words like “game”, which, as Wittgenstein argued, we understand in an inexact way, since we cannot provide a definition of games that covers every attested use of the term. The other type involves words that are characterized by “semantic poverty”, such as emphatic particles. These words, I argue, seem intuitively to have a meaning, but we don’t seem to be able to define them in relation to either extensional properties, i.e. those having to do with referring to objects, or intensional properties, i.e. those having to do with the internal content of an expression. This is what I call the paradox of imprecision in language: fluent speakers of a language use both semantically vague and semantically poor expressions in recognizably systematic ways, but we can’t seem to define what they mean. In conclusion, I attempt to state concisely what I consider to be a more intuitive view of how language works in general that explains this apparent paradox.

Background: Wittgenstein
Some background: Ludwig Wittgenstein was an Austrian-born philosopher based at Cambridge for most of his life. His first published work, titled *Tractatus Logico-Philosophicus*, made him a central figure in the logical positivist school of philosophy of language, which was centered around the idea that natural language should be replaced with something more precise if philosophy is going to make progress. In the 1930s, however, Wittgenstein began to develop radically different views of language from those he had expressed in the *Tractatus*. In his *Philosophical Investigations*, published in 1953 after his death, he argues in many different ways for the primacy of the social function of language, and for his belief that philosophical problems are illusory, based on a failure to understand the workings of our ordinary language. He uses the example of the word “game” to show that we don’t necessarily need to have an artificially regimented definition of a word in order to use it. This is what I call the phenomenon of efficient imprecision.

Perhaps the first philosopher to engage with the problem of efficient imprecision was St. Augustine, who, in contemplating the mystery of time, said, “quid est ergo tempus? si nemo ex me quærat scio; si quaerenti explicare velim, nescio”. In fact, Wittgenstein includes this very quotation in the part of *Philosophical Investigations* where he famously considers our (allegedly) imprecise understanding of the word “game”:

69. How should we describe to someone what a game is? I imagine that we should describe *games* to him, and we might add: “This *and similar things* are called ‘games’”. And do we know any more about it ourselves?...We do not know the boundaries because none have been drawn...we can draw a boundary—-for a special purpose. Does it take that to make the concept usable?...No more than it took the definition: 1 pace = 75 cm. To make the measure of length ‘one pace’ usable. And if you want to stay “But still, before that it wasn’t an exact measure”, then I reply: very well, it was an inexact one.--Though you still owe me a definition of exactness.

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Wittgenstein has observed that a language user does not need to be readily able to retrieve a precise definition of a term from the regimented area of his or her language in order to use the word, and consequently the concept, with fluency.

He also remarks that a definition of linguistic precision is still wanting. Wittgenstein’s Tractarian conception of a logically ideal and precise language was founded on his logical atomism, which depended on the ability to analyze statements about complexes into statements about simples. Wittgenstein states elsewhere in the *Investigations* that what he called “objects” in his Tractarian period were to be considered “primary elements”, “simple constituent parts of which reality is composed”; however, in the *Investigations*, Wittgenstein shows that the compositeness or simpleness of a thing is always intuited relative to a particular context and a particular language:

If I tell someone without any further explanation: “What I see before me now is composite”, he will have the right to ask: “What do you mean by ‘composite’? For there are all sorts of things that that can mean!”--The question “Is what you see composite?” makes good sense if it is already established what kind of complexity--that is, which particular use of the word--is in question.

It is clear, therefore, that we will not attain a notion of exactness that generalizes across linguistic contexts. However, a notion of language-relative exactness remains theoretically available. This is what I will attempt to develop in the next section.

*A notion of language-relative precision*
An expression or term that meets our criteria of language-relative precision I will call *L-precise.* We are going to end up saying, roughly, that an expression is *L-precise* if its usage would be amenable to possible regimentation, and that an expression is efficiently imprecise if language users employ it practically infallibly, but its usage is not amenable to possible regimentation. It is important to keep in mind that a notion of precision relative to a given language will have to be essentially behavioristic, because if we look beyond the ways in which a term is used to some theoretical “essential meaning” of the term, we will be talking about a concept that is presumably not confined to one given language, but potentially common to all. This is a subtle but important distinction. We want to think of a precise definition as documenting, and enforcing conformity with, established usage, not of accessing some underlying “essential quality” of an expression.

A word unanalyzed is neither precise nor imprecise; it is either effective or ineffective upon a particular occasion of its use. Our inquiry is not about how we *use* language, but about how we *understand our use of* language. Therefore, it is the form of the definition given for a term that renders it precise or imprecise. But we need to be careful here, because considering definitions as having influence on a word or expression’s meaning leads us to the threshold of the major criticisms of the notion of analyticity, or truth by dint of linguistic facts alone, advanced by W.V. Quine in his seminal 1951 paper “Two Dogmas of Empiricism”. Quine forcefully attacks the intelligibility of any proposed general distinction between analytic and synthetic truths, because the notion of analyticity to be explained is founded on the also unexplained notion of synonymy. Quine explains the connection between analyticity and definitions, and shows the problems that arise in thinking about analyticity, in section II:

There are those who...say that the...analytic statements reduce to...logical truths, by *definition*; ‘bachelor’, e.g., is defined as ‘unmarried man’. But how do we find that ‘bachelor’ is defined as ‘unmarried man’? Who defined it thus, and when? Are we to appeal to the nearest dictionary, and accept the lexicographer’s formulation as law?...The lexicographer is an empirical scientist, whose business is the recording of
antecedent facts; and if he glosses ‘bachelor’ as ‘unmarried man’ it is because of his belief that there is a relation of synonymy between these forms, implicit in general or preferred usage prior to his own work...Certainly the “definition” which is the lexicographer’s report of an observed synonymy cannot be taken as the ground of synonymy.3

The key here, however, is that a definition that renders a term L-precise does not purport to express an analytic truth, but merely to place a limit on usage. When we assert that “X is used in the context of signifying (x₁, x₂, x₃...xᵢ)” is a definition rendering the term X L-precise, we do not assert that statements relating X to any or all of the xᵢ’s are necessarily or a priori true, and advance this definition as explaining their truth, but merely attempt to exhaustively report, or, in different contexts, stipulate, the possible significations of X. The definition does not have to be construed as explaining the meaning of X, but only as rendering it precise. Indeed, since a language-relative notion of precision requires a framework of behaviorism, the “explanation” of the meaning of X comes to an end at this delimitation of possible usage. Our notion of L-precision, therefore, is valid even if the intelligibility of the analytic-synthetic distinction is denied, and can be incorporated into a framework of strict linguistic behaviorism,

Quine also gives “a brief appraisal of the role of definition in formal work”; the conception of definition he suggests has some similarities to our notion of an L-precise definition. Quine argues that the so-called definitions which appear in formalized systems are best viewed not as definitions at all, but as “rules of translation” between two languages: an “inclusive language” with distinctive notations for a wealth of concepts, and a language with minimal conceptual commitments which contains the “primitive notation”. In his words, “[w]hole and part are correlated by rules of translation whereby each idiom not in primitive notation is equated to some complex built up of primitive notation.” One could think of a definition capable of rendering a term or expression L-precise as a correlating rule of translation between the definiendum which is under examination and the definientia which, if successful, are composed of
terms and expressions with which we are intimately acquainted and already use fluently. On our analogy, the *definienda* come from the “inclusive language”, and the *definientia* belong to the language of “primitive notation”.

An example will make it clear what I’ve been talking about. Consider the following two definitions of model theory, a topic in mathematical logic:

1) Model theory = universal algebra + logic.

2) Model theory is a topic in mathematical logic.

Definition 1) is from Chang & Keisler’s book on model theory. The Chang and Keisler definition is an example of a definition that renders its *definiendum* precise, or L-precise. For a mathematician and logician who was deeply knowledgeable of universal algebra and logic, but for some reason had never heard of model theory as such, could theoretically, from this definition, invent the entire field of model theory, and subsequently apply the term “model theory” to the field he had invented. Its usage has become *precise*. Whereas it is harder to see, on this view, how someone could do the same thing with definition 2). *This* definition of the term “model theory” does not appear to completely encompass and precisely delimit its observed usage; and the difference between a definition that renders some usage of a term precise and one that does not appears to be whether, given a definition, a language user could independently and exhaustively conceptualize the term’s signification as revealed in its usage. Given the definition 2), we are unable to exhaustively conceptualize model theory in order to differentiate it from, say, proof theory (another topic in mathematical logic), and I don’t think we can call that giving an exact boundary to our use of the term. Perhaps 2) does not intuitively seem to be a definition. This, I believe, is because we ordinarily use the word “definition” to mean a definition that renders the term as precise as possible, and this shows that the distinction we have drawn between terms that are L-precise and terms that are not comports to some degree with a certain intuition that we already have about how language works.
This is a strong requirement for precision; however, it is coherent enough for us to work with. You may be thinking at this point that there are rather few terms and expressions in natural language that will measure up to this requirement; and I would say that you are right. As I said in the introduction to this paper, I see the phenomenon of efficient imprecision as being quite common in our ordinary language and in some sense constitutive of the difference between natural and formal language.

Examples of efficient imprecision

Now let’s look at some examples of the phenomenon that I have been calling “efficient imprecision”. The examples we will consider will be broadly of two types: one type, which corresponds more or less to what Wittgenstein was talking about in his discussion of the word “game”, and another type, examples of which are the “semantically poor” expressions with which natural language is replete, and without which ordinary human communication is difficult to imagine. Since we have already discussed Wittgenstein’s thoughts on the first type, involving efficient imprecision with semantically rich lexical items, I will focus on drawing distinguishing between the two types and discussing the second type in detail.

To summarize briefly Wittgenstein’s remarks in the *Investigations*: A word like “game” is used on a daily basis by all fluent speakers of a language, and almost never is the correctness of their employment of the word called into question within the normal range of linguistic situations in which the term might be plausibly applied. But when presented with a borderline case, or asked to provide an exact, or, as we have been saying, L-precise, definition or delimitation of the meaning of the word “game”, we find it almost impossible to do so. Note that, while we could categorize a multiplicity of restricted, exact uses of the word “game”, the crucial point is that we cannot give an exact definition of the whole usage of the term “game” in our language; this is exactly what the technical notion of L-precision was meant to
capture. In addition, we would explain the meaning of the word “game” to someone unfamiliar with that term by showing him or her examples of particular games; their connection is established, not by an exact definition of the word, but on the basis of something like a “family resemblance”.

The second type of efficient imprecision might even be called the “strong” case, and the first type the “weak” case; for there appear to be words which are extremely common in our ordinary language for which we are not only unprepared to provide a definition that would render the term L-precise, but for which it is difficult to say what sort of definition we would want to try to provide.

On almost any page of any ancient Greek text you are likely to find the word γε. It is one of the most common words in the language; but even professional scholars have a difficult time stating what it means. Its entry in Liddell and Scott’s venerable Greek-English Lexicon is more of a catalog of contexts in which it is attested in the literature than a delimitation of its possible meanings, which is an essential characteristic of definitions of efficiently imprecise terms. It is generally understood as adding emphasis to a word or phrase or contrasting it with another word, phrase, sentence, or entire context of discourse. Obviously, like articles, demonstratives and indexicals, it has no reference of its own; but words like γε, it seems, are different even from these words in that they do not contribute in any way to either the extensional or the intensional information content of the sentence. The definite article, for instance, provides information that helps in fixing the reference (extension) of the singular or general term it is associated with. In the sentence “The man with brown hair is getting married”, the definite article is used like a quantifier, informing the listener as to how many men with brown hair are under discussion. If we had said “A man with brown hair is getting married”, then we could be talking about any man; the indefinite article can be translated by the existential quantifier. But when we use a word only to emphasize or draw a contrast, we have contributed nothing to the reference (extension) of the sentence with this word; its use doesn’t belong to the activity of picking out or describing objects in the world. Nor, however, does it seem to add to the pure conceptual content (intension) of a word, phrase, or
sentence. An English analogue is “very”, as in the sentence “This is the very heart of the matter”. It seems intuitively obvious that the conceptual content of this sentence is the same as that of “This is the heart of the matter”, without the word “very”. Words like English “very” or Greek γε seem in some way to be more of a piece with the rest of our behavioral apparatus, like saying part of a sentence louder to emphasize it; but they clearly function like ordinary words in other ways. They are involved in syntactic structure, they can scope over different parts of a sentence like modal operators, and, most importantly, they intuitively seem to mean something; they signify, meaning, they behave like signs. But they do not contribute anything to either the extensional or intensional properties of their linguistic context; therefore, in relation to what would we purport to define their meaning? While words like “game” seem to be resistant to definition in practice, “semantically poor” words seem in principle undefinable.

Conclusion

Are we, in general, conscious of our language-using activity as something that is necessarily either precise or imprecise? It is sometimes much more intuitive to think of our language-behavior as of a piece with the rest of our behavioral apparatus. If we could somehow know that somebody who was crying out in pain was not really in pain, we would not say that he was being inexact, but that he was faking it. Exactness or inexactness does not enter into it. Likewise, semantically poor words like Greek γε and English “very”, “rather”, and even “but” (which, of course, is not translatable as a logical connective) have a performative component—the behavioral context in which they occur, the speaker’s emphasizing a contrast, constitutes in some sense their correct use. Perhaps this is how language works in general? It is often said that words do not properly refer, only denote; a word can be used by a speaker to refer. But what exactly does denotation, often construed as the “stable” part of a word’s meaning, then come to, other than simply what a word is overwhelmingly most commonly used to refer to?
Since, however, regimented languages do in fact exist, such as the languages of mathematics, logic and theoretical physics, where, for instance, as Quine noted in his book *Word and Object*, we could not specify any condition for knowing what a neutrino (a theoretical entity in particle physics) is beyond understanding the theoretical language in which it is used, it appears that language exists along a spectrum, with the conception of language as a sort of regimented picture of a regimented reality at one end, and as of a piece with the rest of our behavioral repertoire at the other end. Words that exhibit efficient imprecision, I conclude, are located somewhere in the middle of this spectrum. They have meaning and reference, but their usage, as we saw above, does not have to be amenable to regimentation in order for us to use them; therefore, they seem to have characteristics of both descriptive language and the behavioral apparatus. And this seems to comport with how we acquire language, which, it should be remembered, we do our whole lives: much of language we learn by observing the environment and behavioral context in which others use them, but there is also a lot of language, such as the technical languages of exact sciences, which we can only learn by engaging with it as quasi-regimented and a picture of a reality that is also in some sense regimented to fit the language.

I believe that the conception of language I have advanced--thinking of language as a flexible, equipotent faculty, capable of performing the functions we intuitively associate with both formalized language and the activity inherent in ordinary discourse, depending on our needs--can clarify and preempt many potential confusions for philosophers, linguists and cognitive scientists.