Epistemological tensions between linguistic description and ordinary speakers' intuitive knowledge: examples from French verb morphology

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Abstract
In this article, I address epistemological questions regarding the status of linguistic rules and the pervasive—though seldom discussed—tension that arises between theory-driven object perception by linguists on the one hand, and ordinary speakers' possible intuitive knowledge on the other hand. Several issues will be discussed using examples from French verb morphology, based on the 6500 verbs from *Le Petit Robert* dictionary (2013).

1. Introduction

A journalist commenting on French actress Juliette Binoche's performance declared on the radio "elle est insupportable, elle ne joue pas elle *binoche*" (she is unbearable, she does not act, she "*binoches*"). Undoubtedly, any French native speaker can spontaneously produce the whole morphological paradigm of this brand new verb, and for instance add /ʁa/ to this Pr3[1] /binɔʃ/ in order to form Fut3 /binɔʃʁa/. But what is the status of this "rule"?

In this article, I will mainly raise epistemological questions regarding the tension between scientific expectations while analyzing French verb inflectional morphological rules on the one hand and ordinary speakers' possible inflectional production rules on the other.

[1] Tenses are abbreviated as Pr(esent), Imp(erfect), Fut(ure), Inf(initive), P(assé) S(imple), P(ast) P(articiple). Persons follow the conventional *I* to *they* order from 1 to 6. Thus, Pr1-3 indicates Present singular.

2. Some epistemological issues about explanations and descriptions

2.1. Linguistics as a science: a brief overview of some of the constraints

As scientists, linguists aim at proposing *coherent*, *exhaustive*, *predictive* and ideally *thorough*, *clear* and *simple*[2] theories[3] (Allan 2003 ; Lerot 1993: 22-23), while also mostly implicitly "put[ting] a high value on elegance and generality" (Wolpert 1993: 18) (see also Guillaume 1973: 84). According to Soutet (1995: 190) (see also Martin 2002: 68-69 ; Thagard 2008: 471-475), to be coherent, a theory may "not include two contradictory statements," if it does, then:

> L'exigence – difficile à satisfaire – de cohérence conduit le linguiste à se confronter au couple de la règle et de l'exception. […] De deux choses l'une alors: ou bien on estime que ce conflit est dans l'objet lui-même, ce qui revient à considérer que, dans le domaine considéré, coexistent des propriétés contradictoires; ou bien on postule l'objet homogène et l'on est alors conduit à considérer que la contradiction résulte d'une perception fautive ou, à tout le moins, lacunaire de l'objet. (Soutet 1995: 191)

Underlying Soutet's stance toward the object lays a strong implicit postulate, namely that language should be regarded as homogeneous (for a discussion about language homogeneity from two different perspectives, see Croft 2000: 90ff ; Milner 1989: 639ff), as clearly stated by Saussure (De) (1916/1959: 15) "Whereas speech is heterogeneous, language […] is homogeneous." Is language intrinsically homogeneous? Or does the very idea of homogeneity result from the linguists' endeavor to provide coherent and exhaustive descriptions[4], hence highlighting the rules that work while downplaying the possible epistemological significance of exceptions? Do rules reflect actual regularities in the language?

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[2] As Hurford (1977: 574) puts it "Science seeks to discover as much lawfulness as possible in the universe—but, paradoxically, to formulate as few laws as possible, since its lawmaking propensities are strictly curbed by the requirement that theories be maximally simple."

[3] By *theory*, I mean: a provisional intellectual model of a humanly perceivable part of the universe, consisting of interrelated and partly conjectural propositions seeking to accurately describe, explain, and predict observed regularities in the part of the universe under investigation.

[4] Biases might also arise from data collection "since the documentation does not repeat the documented reality itself, but only represents a sample of it, there is necessarily a process of selection, which in itself is not objective and which, in fact, can be highly tendentious." (Lehmann 2001: 87-88).

2.2. Do rules always *exist?*

> 'Well, I don't go all the way with the neuroscientists. OK, the mind is a machine, but a *virtual* machine. A system of systems.'
> 'Perhaps it isn't a system at all.'
> 'Oh, but it is. Everything in the universe is. If you are a scientist you have to start from that assumption'.
>
> Lodge, David (2001), *Thinks*

If, as mentioned in the introduction, a French native speaker can effortlessly produce *all* the forms belonging to the verb paradigm of the absolute neologism /binɔʃ/, some kind of "rule" leading to these new forms *has to* exist (see Morin 1987: 14). But what is a "rule"? According to Kiefer (2000: 297), "a grammatical rule is any statement expressing a linguistically significant generalization about the grammatical facts of a particular language" (see also Fradin 2003: 306). As the term "statement" clearly suggests, such "a given generalization […] can only acquire significance in relation to a particular linguistic theory" (Berg 1998: 2). The problem is then to determine whether rules are mere "statements about actual linguistic behavior" (Trask 1999/2007: 248) proposed by linguists and inherently bound to specific—and often incompatible—theoretical models, or actually reflect a *real* "linguistic behavior", which ordinary speakers rely on to produce grammatical sentences. To what extent do rules actually organize language? Let us consider the tension between the theory ("meta-level") and the object ("object-level"[5]).

As a first approximation, I will consider the four possible configurations of Table 1, making the linguists' endeavor to formulate rules either a dead end or a possible achievement. *Intrinsic rules* (IR) represent the rules assumed to exist in the language itself—no matter whether linguists can find them or not—, and *proposed rules* (PR) the ones formulated by linguists. The following table presents the four possibilities of existing (1) or non-existing (0) rules on either side:

[5] These two terms are borrowed from Lehmann (2001: 89, table 2). The word "object" is by itself already theory-dependent, since "it is the viewpoint that creates the object" (Saussure (De) 1916/1959: 8).

	IR	PR
I	0	0
II	0	1
III	1	1
IV	1	0

Table 1 – Theoretical approaches to rules

Any scientist would normally discard I and IV, since her responsibility and duty—which justifies her social status—is precisely to discover regularities and formulate rules. In I, denying the very existence of intrinsic rules in language would just make this scientific quest irrelevant (however, see 2.4). Moreover, as native speakers of at least one language, linguists—no matter their epistemological stance toward their object—have to spontaneously acknowledge that some "device" allows languages to be learned, and previously unknown grammatical forms to be accurately produced. These two reasons suffice to acknowledge the existence of rules, and hence regard IV as a scientific failure.

Now what about II and III? III obviously represents the ideal scientific situation. Nonetheless, there is no guarantee that the rules proposed by the linguist actually reflect the intrinsic rules of the language investigated. As to configuration II, one might want to definitely reject it on the ground that—as argued above—intrinsic rules must exist if language learnability and productivity are to be explained. However, claiming that rules exist in a language is not an all-or-nothing issue. There might be *some* parts of the language that obey rules while *others* do not, although this latter state of affairs does not preclude linguists from positing the existence of rules[6]. Indeed, scientists (see Lodge's epigraph), cannot help assuming that what they investigate works in a systemic way, and generations of linguistics students have been taught that language is a "system of signs[7]" (Saussure (De) 1916/1959: 15) (or a "system of systems" according to Guillaume 1973: 176), whose mechanisms need to be uncovered and specified by linguists.

[6] Like any scientist, a linguist might incorrectly posit the existence of an entity that complies with her theoretical model and justifies her observation (e.g. phlogiston before Lavoisier, ether before Einstein, see Chalmers 1999: 114). This issue is probably more difficult to tackle in linguistics than in natural sciences, since *rules* are at best neurological processes that so far cannot be observed.

[7] Lass (1980: 89) criticizes the term *system* "used very loosely in describing various aspects of language […]. The most this would be likely to do is to give us a pseudo-precision, i.e. create a false sense that there are algorithms at the bottom of the garden—when we get there."

However, does language nicely meet the scientific expectations harbored by linguists? Let us consider an example.

2.3. The quest for the unruly rule…

While comparing the sentences "*La pendule retarde* [lapãdylrətard]" (the clock *is* slow) and "*La pendule retardait* [lapãdylrətardɛ]" (the clock *was* slow), Dubois (1967: 9) refers to a "system of marks" ("système de marques"), thus allowing the *systemic* discrimination between Pr /ʁətaʁd/ and Imparfait /ʁətaʁdɛ/. Hence, accordingly Dubois (1967: 61) argues that for the three idiosyncratic Pr5 forms from, respectively, *be*, *say* and *do* /ɛt/ (*êtes*), /dit/ (*dites*), /fɛt/ (*faites*), "a specific type of morphophoneme /t/" is added to Pr2 /ɛ/ (*es*), /di/ (*dis*), /fɛ/ (*fais*). From a scientific point of view, this statement undeniably constitutes an accurate description of the data. However, it raises some epistemological questions regarding its status. Does it reflect a cognitive reality in the speakers' brain? If, after Dubois, we grant the above description the status of a systemic rule, for French verbs' Pr5, there would be two "competing" rules, namely the one adding /t/ to Pr2 for *être*, *dire* and *faire*, and the one adding /e/ to Pr2, here represented by *laver* (wash), and *courir* (run):

	Rule 1		Rule 2	
Pr2	ɛ, di, fɛ		lav, kuʁ	
Pr5	ɛ, di, fɛ	t	lav, kuʁ	e

Table 2 – Two possible competing rules for Pr5 in French?

Among the 6470[8] verbs from the *Petit Robert* (2013) dictionary, rule 1 applies exclusively to these three verbs, whereas rule 2 concerns more than 5500 verbs (~86%), i.e. the ones with only one Pr radical, such as /lav/ (wash-Pr1-3.6), or /kuʁ/ (run-Pr1-3.6). Could Dubois's description reflect what really takes place in French speakers' brain? Are ordinary speakers aware of the existence of this idiosyncratic morpheme /t/[9]? What could be the processing stages involved to become aware of this rule and memorize it? Here are some possible steps:

a) Have access to at least two forms from one of these three verbs;

[8] This corpus of 6470 verbs was collected from the electronic version of the dictionary *Le Petit Robert* (2013). Verbs have been manually organized by types following the classifications proposed by Pouradier Duteil (1997) and Séguin (1986).

[9] Such a morpheme *theoretically* exists elsewhere in verb paradigms, namely in PS5. However, this tense is no longer used orally and hence makes the morpheme /t/ purely theoretical.

b) Hypothesize rule 1; e.g. for *être*, the observation of /ɛ/ for Pr2, *and* /ɛt/ for Pr5 leads to the following rule: Pr5=Pr2+/t/ *and* Pr2=Pr5-/t/;
c) Memorize that rule 1 applies to *être*;
d) Hypothesize the extension of this rule to other verbs;
e) Realize that rule 1 does not work for thousands of French verbs, and hence has to be inhibited to avoid deviant forms such as /*kuʁt/ (run-Pr5), instead of /kuʁe/;
f) Memorize the inhibition instruction e);
g) Have access to the four other forms /di/-/dit/, and /fɛ/-/fɛt/;
h) Compare these forms as done in b) with *être*;
i) Realize that the rules found in b) also apply to these forms;
j) Memorize that these rules only apply to *dire* and *faire* (i.e. refine e) and f));

Apparently, since steps a) and g) are necessary to establish rule 1 (i.e. access the six forms governed by this rule), direct rote memorization of these forms looks more efficient and straightforward for the speaker[10]. Martinet, probably relying on his own native speaker's intuition, challenges Dubois's explanation:

> on ne remarque pas que l'analyse /ê-t/, /fe-t/, /di-t/ que pourrait suggérer une comparaison avec les trois singuliers correspondants /il è/, /il fè/, /il di/ corresponde, dans l'usage, à un rapprochement analogique efficace: *vous êtes* est bien ancré chez les sujets qui, par millions, laisseront échapper *vous faisez* et *vous disez*. (Martinet 1974: 99)

Although oversimplified, this short presentation raises questions about the possible tensions between a scientifically coherent explanation and its actual

[10] My point obviously echoes the debate in verb morphology as to the extent of the role of rote memorization versus rule implementation (see Baayen 2007 ; Bybee 1995 ; Clahsen 2006 ; Marcus 2000 ; Nakisha, Plunkett & Hahn 2000 ; Pinker 1999: 121ff). Langacker's (1987: 29) argues about this "rule/list fallacy" i.e. "the assumption, on grounds of simplicity, that particular statements (i.e. lists) must be excised from the grammar of a language if general statements (i.e. rules) that subsume them can be established. Given the general N + *-s* noun-pluralizing rule of English, for instance, specific plural forms following that rule (*beads*, *shoes*, *toes*, *walls*) would not be listed in an optimal grammar. […] this is a specious kind of simplicity for anyone taking seriously the goal of 'psychological reality' in linguistic description. It is gratuitous to assume that mastery of a rule like N + *-s*, and mastery of forms like *beads* that accord with this rule, are mutually exclusive facets of a speaker's knowledge of his language; it is perfectly plausible that the two might sometimes coexist. We do not lose a generalization by including both the rule and specific plural forms in the grammar of English, since the rule itself expresses the generalization".

plausibility from the ordinary speakers' point of view[11]. Can linguists posit the existence of rules on mere theoretical grounds without ever attempting to assess their actual plausibility in the speakers' brain? Should we endorse the "proponents of linguistic rules [who] do not necessarily view them as psychologically real" (Corrigan & Lima 1994: xv)? Although most of these questions have been addressed by (psycho)linguists (see note 10 for references), there remain some essential epistemological issues that I wish to partially discuss here.

2.4. Is language cloud- or clock-like?

In his *Of clouds and clocks* lecture presented in 1965, Popper explains his title as follows:

> My clouds are intended to represent physical systems which, like gases, are highly irregular, disorderly, and more or less unpredictable. I shall assume that we have before us a schema or arrangement in which a very disturbed or disorderly cloud is placed on the left. On the other extreme of our arrangement, on its right, we may place a very reliable pendulum clock, a precision clock, intended to represent physical systems which are regular, orderly, and highly predictable in their behavior. (Popper 1972: 207)

Although Popper's subject is remote from our linguistic discussion, his metaphor raises an important epistemological issue concerning the nature of the object under investigation, and hence the type of description scientists might come up with[12]. If languages were clock-like, then descriptive coherence would be easy to achieve: observed regularities could be formulated as rules by linguists and would reflect *all* the mechanisms involved in language. However, although language is not as unpredictable as a cloud, there might be some parts of it that *do not* follow rules[13]. Then the question arises as to whether linguists should keep trying to look for them. Let us take an example. While trying to formulate rules to describe French PS

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[11] One may object that though predictive, Dubois's rule does not have a high enough predictivity rate. This example raises as well the question of the threshold to be reached for a rule to become *productive for ordinary speakers*: 10 items? 30? 100? (in his "minimal generalization learner model", this issue of "critical number" is also raised from a somewhat different perspective by Albright 2002: 41).

[12] Popper's lecture discusses "the problem of rationality and the freedom of man."

[13] In his discussion about rules—from a very different perspective from mine—, Fradin (2003: 266) notes : "En morphologie […] il est rare qu'on couvre l'ensemble des expressions relevant d'un phénomène au moyen d'une règle unique et nettement formulée. […] Très souvent, la règle décrit une portion des faits, et laisse un résidu plus ou moins important."

and PP within the once acclaimed generative phonology framework[14], Plénat (1987: 137-138) ends up proposing "around fifteen often very simple rules." Nonetheless, albeit his scrupulous study, Plénat (1987: 138) wonders whether his endeavor was not in its very essence vain since "dans un tel ensemble, il est fatal qu'un linguiste découvre un certain nombre de régularités" (see also Morin 1987: 76). Besides this insightful epistemological self-criticism, Plénat raises what I hold to be a fundamental question about the status of the rule with respect to ordinary speakers (my emphasis):

> [le linguiste] a-t-il […] le droit de supposer que ces régularités sont repérées et apprises comme telles par les locuteurs, d'en faire des règles de la grammaire que chacun intériorise? Certainement pas. On pourrait soutenir avec autant de vraisemblance que les verbes irréguliers constituent en synchronie un chaos de formes disparates qui doivent être mémorisées […]. (Plénat 1987: 138)

This "*chaos* of disparate forms that must to be memorized" would belong to the cloud-like part of language and impede the linguists' quest for rules, since as Plénat argues, speakers "certainly" do not implement his proposed rules to produce irregular PP or PS forms, but—as advocated earlier in the case of Pr5 for *dire*, *faire* and *être*—just learn the whole forms by rote. This epistemological stance is summarized in the figure below.

[14] Plénat (1987: 93) used what he himself labels "dated" ("désuet") Chomsky & Halle's (1968) influential theoretical framework from *The Sound Pattern of English*.

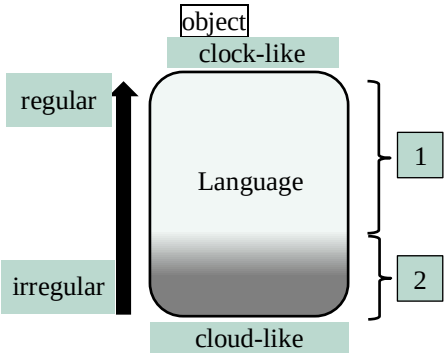

Figure 1 – An epistemological view of language: from cloud to clock…

Plénat's mentioning of speakers[16] is of crucial importance here. Indeed, as a first approach, language could be regarded as any scientific object, and treated by linguists, as astronomers would a planet, biologists a virus, etc. For instance, by bypassing the cardinal role speakers play in the existence of the language data, Chomsky somehow illustrates such a position:

> A grammar of the language L is essentially a theory of L. Any scientific theory is based on a finite number of observations, and it seeks to relate the observed phenomena and to predict new phenomena by constructing general laws in terms

[15] Plénat (1987: 139) modestly acknowledges: "Les règles découvertes n'ont jamais l'occasion de s'appliquer au-delà du corpus qui a servi à les établir". This remark is particularly appropriate concerning PS, since most French native speakers ignore the standard forms from 2nd and 3rd groups provided by grammar books (examples of common deviant forms are given in Kilani-Schoch & Dressler 2005: 199ff).

[16] This obviously depends on the epistemological status given to the role of the theory with respect to language. For instance, Chomsky's (1969: 25) highly influential position holds that "a child who has learned a language has developed an *internal representation of a system of rules*", and that the "long-range task for general linguistics [is to] set the problem of developing an account of this innate linguistic theory that provides the basis for language learning. (Note that we are […] using the term 'theory' […] with a systematic ambiguity, to refer *both to the child's innate predisposition to learn a language […] and to the linguist's account of this.*)" (my emphasis). Such a position allows linguists working within this paradigm to disregard the difference between meta-level and object-level, and ignore the speakers' point of view since "a generative grammar is not a model for a speaker or a hearer" (Chomsky 1969: 9).

> of hypothetical constructs such as (in physics, for example) 'mass' and 'electron'.[17] Chomsky (1957/2002: 49)

However, in linguistics such a "hard science" approach faces at least the following problems: 1) there is no such thing as "*a* language" per se (see Langacker 2008: 215ff)—any such entity is in fact a scientific and/or sociocultural reconstruction by linguists and/or native speakers; 2) native speakers: a) need to acquire their language; b) develop idiosyncratic ways of using language; c) need to use their brain and body in order to be able to speak; d) have access to what they say, but not to how they actually came up with the sentences they uttered; e) speak to other people to communicate; f) end up developing some metalinguistic representation of their own language.

My main concern here relates to the status of the rule in relation to speakers once we acknowledge these facts. One of the first examples is alluded to by Plénat in his conclusion (my emphasis):

> Personne, sans doute, n'irait jusqu'à prétendre qu'elles [=les formes irrégulières] sont apprises une par une. Mais *elles pourraient l'être très diversement suivant les locuteurs*, et la description présentée ici n'aurait, sur telle ou telle autre présentation que le mince avantage – si c'en est un –, d'être plus compacte. *Elle ne révèlerait en rien la façon dont un locuteur organise ses connaissances*.
> […] Il n'y a naturellement pas lieu de croire que tous les locuteurs ont intériorisé exactement les mêmes règles de formation […] (Plénat 1987: 138-139 & 141)

What do we know about the way individual speakers organize their own knowledge? The fact that for *scientific* reasons, scientists need to work inductively on large amounts of data raises epistemological questions regarding the observation of regularities and the resulting formulation of rules[18]. Here the difference between say physics and linguistics is fundamental. A physicist studying the way stones fall does not need to consider that (2a) these stones had to learn how to fall, and above all (2b) that they all do it in a "personal" way (bound to a specific temporal and spatial context)[19]. In linguistics however, while studying language acquisition, linguists do notice individual differences (see also Kail 2012: 38-39):

> One conclusion seems uncontroversial: the Average Child is a fiction, a descriptive convenience like the Average Man or the Average Woman. Theories

[17] Elsewhere Chomsky (1957/2002: 48) uses a revealing analogy concerning his position toward the object: "Perhaps the issue can be clarified by an analogy to a part of chemical theory concerned with the structurally possible compounds. This theory might be said to generate all physically possible compounds just as a grammar generates all grammatically 'possible' utterances."
[18] (for other issues raised by inductive reasoning, see e.g. Hempel 1966: 200).
[19] Let alone (2e): to communicate with other stones.

> of language development can no longer rely on this mythical being. Any theory worth the name will have to account for the variations that are reliably observed in early language learning. (Bates, Dale & Thal 1995: 151)[20]

One might argue that this is limited to "early language learning" and does not concern adults' speaking ability. But how do we know? How can we be sure that the variety of learning styles at early age fades out in mature daily language practice and never gives rise to different underlying speaking strategies? Besides, while analyzing data, whereas "deviant" forms can easily be detected, and interpreted as echoing underlying "defective" structures, a correct surface form never absolutely guarantees that a "correct" underlying rule[21] has been used. Let us examine some of Damourette & Pichon's collected mistakes for PC forms, found in children's, as well as adults' popular language ("le parler du peuple"):

> Il est curieux de constater que, d'après l'analogie *vous répondez*/*répons* [ʁepõ], *il craint*/*craint*, le parler du peuple et celui des enfants reforment des [PP] […] par troncature du radical: *vous cous-ez* [kuze]/cous [ku(z)]; *vous vivez* [vive]/vi [vi]; *vous taisez* [tɛze]/*tais* [tɛ], etc. [I reformatted the phonetic transcription]
>
> (Damourette & Pichon 1911-1930: 134)

There is no need to postulate a truncation from the Pr5 radical—which anyhow does not work for *craindre*, yielding /kʁɛɲ/ instead of /kʁɛ̃/ (*craint*) as mentioned by the authors—, children and adult might as well be using Pr1-3 (i.e. as PP) to form their PC (see Morin 1987: 76), hence leading to /ila**vi**/–*–from, say, Pr3 /il**vi**/ (*il vit*)—instead of /ila**veky**/ (*il a vécu*) (an error, among others, also mentioned by Plénat 1987: 139-140)[22]. In cases such as /ila**vi**/, linguists cannot but identify these forms as errors, and then logically hypothesize a wrong underlying rule leading to these wrong surface forms. However, the child (or the adult), who constructs PC with the rule "use avoir-Pr+Pr1-3" will *also* produce "correct" surface-forms such as /ila**fini**/ (*il a fini*), /ila**fɛ**/ (*il a fait*), /ila**di**/ (*il a dit*), /ila**ekʁi**/ (*il a écrit*), /ila**kõdɥi**/ (*il a conduit*), etc. These "mistakes" (see infra) based on a "wrong underlying rule" will obviously pass unnoticed. In other words, what the grammatical and linguistic tradition regards as the *correct* formation of PC—involving a

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[20] Child language being individually investigated naturally receives closer attention than adult language.

[21] I am aware that my use of "correct" here is problematic. We could equate it with "a standard adult grammatical rule hypothesized by linguists and possibly intuited by ordinary adult speakers" (somehow resembling the 'constructive rule' among the three types proposed by Besse 1991).

[22] Plénat proposes an alternative explanation based on his theoretical model.

PP (i.e. a specific form, not to be equated with Pr1-3)—might not reflect what speakers actually do.

To further investigate the epistemological consequence of this issue, let us imagine that French PC is—for the sake of the demonstration—exclusively constructed with the Pr of the *avoir* auxiliary (and never with *être* auxiliary). Then an ordinary speaker (whether a child or an adult) might use the above-mentioned rule complemented by Rule 2[23]:

> Rule 1: "For type X verbs, PC=avoir-Pr+Pr1-3": e.g. /ila**aʒi**/ (*il a agi*), from Pr1-3 /**aʒi**/ (*agis/t*)
> Rule 2: "For verbs with /e/-ending Inf, PC=avoir-Pr+Inf": e.g. /ila**lave**/ (*il a lavé*) from Inf /**lave**/ (*laver*)

These two rules would cover 96% of the 6500 verbs from the *Petit Robert*, respectively 6.5% and 89.5%. The remainder (250 verbs) would have to be memorized one by one as "idiosyncratic". The deviant forms mentioned above by Damourette & Pichon (as well as the ones cited by Plénat 1987: 139-140) belong to the set of more than 400 verbs, which conform to Rule 1 and have homophonous forms for Pr1-3 and PP.

Even though probably most linguists would reject Rules 1 and 2, the fact that these two "wrong" underlying rules can produce 96% of *correct* surface forms (/ila**aʒi**/, /ila**lave**/ sound perfect!) raises serious epistemological questions. One could argue that so-called 1st group verbs are overrepresented compared to their actual share in daily conversation, thus giving a distorted view of the issue. But even within the 200 most frequent verbs (according to Gougenheim, Michéa, Rivenc & Sauvageot 1964), the production of *correct* surface forms with Rules 1 and 2 still reaches 71% (6% for R1, 65% for R2[24], contra 29% for the rest[25]). It could be further objected that, on linguistic ground, the semantic or functional nature of Inf does not allow its usage as PP to construct PC according to our speaker's Rule 2. If, again *from an ordinary speaker's point of view*, this difference were clear, then why would French grammar books need to give "tricks" such as the one below to avoid the spelling confusion between *fermer* (Inf) and *fermé* (PP)?

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[23] Bassano *et al.*'s (2001: 143) French acquisition data corroborates Rule 2. Accordingly, as Kilani-Schoch (2003: 289) notes, "there should be analogical PP forms based on Inf"; she found "avait mettre" instead of "avait mis" in her corpus.

[24] Frequent spelling mistakes, e.g. "il a chant**er**" (Inf) for "il a chant**é**" (PP), tend to corroborate such a possibility.

[25] For the remainder, which can be subdivided into less than twenty similar rime subsets such as Pr6 /ãt**ãd**/ > PP /ãt**ãdy**/ (entendu), Pr6 /ʁ**ãd**/ > PP /ʁ**ãdy**/ (rendu), Bybee's (1995: 428) network model suffices to explain how "morphological structure emerges from the connections [words] make with other words in the lexicon."

> Pour distinguer les diverses terminaisons des verbes du 1er groupe, on peut remplacer la forme pour laquelle on hésite par un verbe du 2e ou du 3e groupe; on entend alors la différence.
> […] *Nous avons* fermé *la porte* → *Nous avons* ouvert *la porte* (Bled, Bled & Berlion 2010: 45)

Since such spelling confusions between homophonous PP and Inf persist despite years of explicit and implicit teaching (up to 20% of spelling errors for 15 year-old students, according to Brissaud 2002: 63), it seems legitimate to question whether the semantic or functional difference tacitly advocated by linguists and grammarians actually corresponds to ordinary speakers' use of underlying rules.

Let us synthesize the epistemological issue raised by these imagined "wrong underlying rules" yielding a vast amount of correct surface forms. In the table below, LA stands for "linguistically acceptable", PCSF for "production of correct surface forms" and DE for "detectable errors"; figures are rounded and based on the corpus of verbs from the *Petit Robert* (2013) and the *Français élémentaire* (Gougenheim *et al.* 1964)[26].

PC formation rules		Number of verbs N=6500	N=200	LA?	PCSF?	DE?		
R1	avoir-Pr+Pr1-3	6,5%	6%	no	yes	no		
R2	avoir-Pr+Inf	89.5%	65%	no	yes	no		
Total		96%	71%	no	yes	no	⇨	A 'incorrect' interpretation
Neither R1 nor R2		4%	29%	no	no	yes	⇨	B correct interpretation

Table 3 – "Wrong underlying rules" yielding correct surface forms

The problem arises from the tension between the ordinary speaker's perspective and the linguist's. On the one hand, the ordinary speaker uses rules that would be discarded as *wrong* by linguists (since neither Pr1-3 nor Inf *are* PPs), although the forms she produces sound objectively *right* (e.g. R1: /ila**fųi**/, *il a fui*; R2: /ila**ʃãte**/, *il a chanté*) in 96% (N=6500) or 71% (N=200) of the data. On the other hand, the linguist posits a scientifically acceptable rule Rx, say PC=avoir-Pr+PP (in which PP meets linguistic criteria acknowledged in the field, and is therefore highly predictive), and sees that the data complies with Rx, *even though* this is *not* the rule that the ordinary speaker uses. The matching of the posited scientific rule with the hypothesized underlying speaker's rule responsible for a vast amount of the data is thus an illusion. Hence configuration A leads to an "incorrect"—albeit unavoidable—interpretation of the data by the linguist. The only correct interpretation would in fact come from B, which, in 4% (N=6500) and 29%

[26] Calculations are based on data manually tagged in Excel.

(N=200) of the cases, allows the detection of errors in surface forms produced by Rule 1—e.g. /ila**ʁepõ**/, from Pr1-3 /ʁepõ/, instead of /ila**ʁepõdy**/ (*il a répondu*) (listed by Damourette & Pichon 1911-1930: 134).

Insofar as linguistics does not have any direct access to speakers' production processes, there seems to be no way to escape this linguistically embarrassing epistemological state of affairs (see however the tentative exploration of neural substrates underlying production processes in Sahin, Pinker, Cash, Schomer & Halgren 2009). In the end, this discussion boils down to the fundamental question (mostly irrelevant in other sciences): what are the possible arguments that would allow us to hypothesize that ordinary speakers think and speak in accordance with a specific scientifically coherent model? Although there might be no answer to this thorny question, this is no reason to dismiss ordinary speakers' perspective as irrelevant.

2.5. Advocating an ordinary speaker's perspective in linguistics

In order to clarify the expression "ordinary speaker", let me first quote this highly instructive account from a bilingual native—and ideally *ordinary*, albeit unique—speaker of French and English, raised in Louisiana, who never learned to write or read French. In this passage, he explains to the interviewer why it is difficult for him to translate a single English word into a single French word (here the translation for *tree*):

> – Comment vous dites *cold*?
> – [lœfrɛ]. C'est-à-dire, c'est selon l'histoire […]. Tu vois, pour un n-exemple, t'as *larbre, narbre, arbre* ou *zarbre*: *un narbre.* Tu vois, t'as […] des fois t'uses le mot *larbre, narbre, arbre* ou *zarbre. Zarbre* veut dire "plus […] qu'un". En anglais, t'uses un mot. Ça me gêne pas si y en a un ou i n'n a dix, c'est toujours le même mot. Et en français, t'as quatre mots […] (quoted in Morin 2005: 14)

In his metalinguistic discussion about what linguists would call the French "liaison", the speaker mentions the four surface forms *larbre*, *narbre*, *arbre zarbre*, which, for him represent "four words" ("en français, t'as quatre mots"), among which "zarbre" is the word "meaning more than one" ("plus qu'un"). This passage presents the ultimate—though obviously extremely rare—ordinary speaker, expressing *genuinely* his metalinguistic judgment, uninfluenced by writing[27]. Had he been literate, this speaker would probably never have made such a claim. Though anecdotal, this enlightening passage gives us some insight into what a literate ordinary speaker—and not a theory-driven one—would be if not influenced by years of schooling, reading,

[27] It is hard to evaluate the impact of writing, reading and schooling on our metalinguistic knowledge. Moreover, introspective and retrospective efforts into personal preschool memories in order to shed light on the issue are doomed to fail.

writing and grammar teaching. Such an account is probably the closest we can get to self-introspection about underlying rules. It should therefore be considered as a possible perspective for linguistic investigation (this is done by Morin 2005).

Although speakers from compulsory schooling societies are probably highly influenced by writing and grammatical tradition in their metalinguistic analyses, it is nonetheless unlikely that core language mechanisms acquired during early childhood change significantly under the influence of schooling. And as the spelling confusions, mentioned earlier, between *–é* and *–er* in verb endings ("il a *tuer" for "il a tué"; see the extensive study on this issue by Brissaud, Chevrot & Lefrançois 2006) tend to show, it takes years of training to inculcate what might be perceived as counter-intuitive spelling to some speakers who, we could hypothesize, use different underlying rules.

In other words, an "ordinary speaker" is a normal language user who primarily *speaks* the language in her own way. Although trivial, this statement is of prime importance to avoid sacrificing ordinary speakers' point of view for the sake of preserving the coherence of the theoretical model proposed by linguists. This position echoes Saussure's difference between *objective* analysis, "based on history" and carried out by linguists, and *subjective* analysis, that "speakers constantly make of the units of language" (Saussure (De) 1916/1959: 183). Thus, while dealing with analogy:

> The grammarian is prone to think that spontaneous analyses of language are wrong; the truth is that subjective analysis is no more false than "false" analogy. […] There is no common yardstick for both the analysis of speakers and the analysis of the historian although both use the same procedure: the confrontation of series that have a common element. Both analyses are justifiable, and each retains its value. *In the last resort, however, only the speakers' analysis matters, for it is based directly on the facts of language.*
>
> (Saussure (De) 1916/1959: 183) (my emphasis)

The importance of ordinary speakers is even more explicitly stated in Saussure's manuscripts found in 1996: "avant de venir nous parler d'abstractions, il faut avoir un critérium fixe touchant ce qu'on peut appeler *réel* en morphologie. *Critérium* : Ce qui est réel, c'est ce dont les sujets parlants ont conscience à un degré quelconque; tout ce dont ils ont conscience et rien que ce dont ils peuvent avoir conscience" (Saussure (De) 2002: 183) (for a thorough argument, see also Komatsu & Wolf 1996: 70ff). This emphasis on speakers' awareness naturally leads to pay more attention to surface forms, i.e. "living units perceived by speakers" (Saussure (De) 1916/1959: 170):

> In Modern French, *somnolent* 'sleepy' is analyzed *somnol-ent*, as if it were a present participle. Proof of this is the existence of the verb *somnoler* 'be sleepy.' But in Latin the division was *somno-lentus*, like *succu-lentus*, etc., and before that it was *somn-olentus* 'smelling of sleep,' from *olere*, as in *vin-olentus* 'smelling of wine'. The most obvious and important effect of analogy is thus the substituting of more regular forms composed of living elements for older irregular and obsolescent forms. (Saussure (De) 1916/1959: 170-171)

Following Saussure's emphasis on the role of "subjective analysis" in language, I will advocate an "intuitive" linguistic analysis[28], to remain as close as possible to ordinary speakers' intuition. As linguists, we should endeavor to satisfy at least the following points[29]:

a) Refrain from projecting theoretical constraints onto the object
b) Keep as close as possible to ordinary speakers' metalinguistic intuition
c) Be consistent with language acquisition data
d) Be consistent with ordinary language use
e) Beware of any biased analysis induced by writing
f) Take existing surface forms as basis for the analysis and avoid postulating abstract underlying entities on theoretical ground
g) Account for diachronic "residue" in the language
h) Consider that inflected verbs are the result of a process in time and that an inflected verb is not an isolated item but *always* appears in an utterance

I will now discuss points a) to d) with examples taken from the literature about French morphology[30].

2.5.1. Refrain from projecting scientific constraints onto the object

As I have already partly discussed this issue in 2.1, I will only briefly recall two of the main scientific constraints a theoretical model faces when it strives to be *coherent* and *predictive*[31]. The figure below schematically synthesizes

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[28] Even though Saussure (De) (1916/1959: 183) clearly states that "subjective" refers to speakers (i.e. *subjects*), this term is somehow misleading both in French and English, since it is usually opposed to "objective", which tends to be equated with "true" or "scientifically demonstrated". I will therefore use "intuitive" instead.

[29] This list is not meant to be exhaustive. For the time being, it should be considered as a general guideline. Points a) and b) are found in Allan (2003: 552).

[30] The original draft of this article dealt with each point, but has been shortened by half for editorial reasons.

[31] Obviously I am not claiming that these criteria are irrelevant. Nonetheless, in linguistics, confusion between meta-level and object-level may lead us astray. For instance, the word *rule* may refer to both levels, either the way the language is

the tension between the projected theory-driven object, resulting from these criteria, and the "real" object (see note 5).

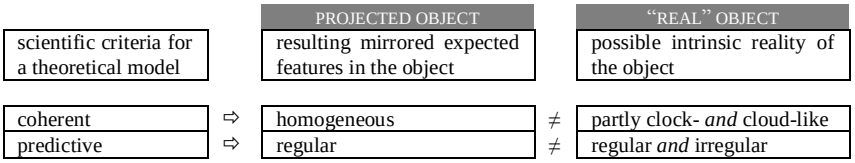

Figure 2 – Epistemological tensions between projected and "real" object

2.5.2. Keep as close as possible to ordinary speakers' metalinguistic intuition
This first point is admittedly impressionistic and obviously leaves a lot of room to personal interpretation but relates to the other points. It is meant as a reminder to avoid treating language as an abstract object that transcends speakers' daily usage and intuition. After all, linguistics itself is a scientific offshoot of speakers' own intuition on language, and it seems paradoxical that some linguists propose models inaccessible to their own native speakers' intuition, despite years of training in the field.

Let me give one example of metalinguistic comment about a spelling confusion between homophonous /e/ endings verbs[32]. While asked why she wrote "On avait cri**er** tous en même temps" (orthographically: avoir-Imp3+Inf) (instead of orthographic PP *cri**é***), a primary school pupil answers: "*Crier*, ***er***, parce que quand deux verbes se suivent, le deuxième est à l'infinitif" (Brissaud, Cogis, Jaffré, Pellat & Fayol 2011: 238). At this level of schooling, such a statement ("when two verbs follow one another, the second must be an Infinitive") clearly shows a good mastery of metalinguistic terms (verb, infinitive), but the pupil's spontaneous intuitive explanation would be regarded as wrong by linguistic standards, although while speaking nobody would have noticed that her rule "does not work". The question is now: is this pupil's intuition right or wrong? From a scientific point of view, her explanation is wrong. From an ordinary speaker's point of view her intuition is right. It yields correct surface forms with /e/-ending type verbs (such as *crier*) and allows to successfully produce an infinite number of correct sentences ("Il avait /dãse/"; "Elles auront /ʒwe/"; "J'ai /mãʒe/", etc.). Then are linguists entitled to claim that they are right *against* speakers'

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supposed to work intrinsically or the account that linguists give of such 'mechanisms' (I am thus opposed to Chomsky's deliberate ambiguous use of the word theory. For a discussion, see Langacker 1990).

[32] I have selected this comment to serve my epistemological discussion. I have no specific position regarding the spelling issue itself, and to what extent it actually reveals underlying rules used by speakers.

intuitions? I would opt for a negative answer. As mentioned earlier, linguistics as a science strives for coherence and exhaustiveness, and on this ground would discard this intuitive rule since 1) it is not specific enough[33] and 2) it *does not* work for *all* types of verbs (e.g. "On avait *finir"), and science would thus require the formulation of a better and more general rule. Then, coming back to the essence of our discussion, if linguists are to describe language, is it epistemologically legitimate for them to disregard the way an ordinary speaker uses her own rules, which, in the end, along with other speakers' idiosyncratic rules provide the data, on which basis linguists propose "*a"* description, and formulate rules?

In other words, taking speakers' metalinguistic intuition seriously results in the following unsatisfactory epistemological dilemma:

1. The linguist acknowledges that the data collected jumbles up speakers' idiosyncratic sets of rules, but she still endeavors to formulate 'average rules' that do not represent any speaker[34];
2. Or she presupposes (or most likely believes) that all speakers use the same underlying rules, which "just" need to be uncovered and then scientifically formulated.

Once again, I have no solution to this puzzling state of affairs.

Let us now turn to the next point, which concerns theoretical consistency with language acquisition data.

2.5.3. Be consistent with language acquisition data

It might look unfair to evaluate the validity of a linguistic theory against language acquisition data, if it was initially meant to describe mature speakers' language. However, if we consider that the early years of language acquisition set the foundation for further developments and effortless language use in later life, then it seems reasonable to examine whether a linguistic theory is consistent with language acquisition data. Whenever it fails to do so, then possible reasons for this incompatibility should be discussed.

While describing French Pr, Morin (1987: 37) proposes—among others—the following "implication rule": "Pr2 serves as basis for Pr1". This rule does not

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[33] Such a legitimate scientific criticism would be unfair to the pupil's metalinguistic self-justification, which, although general, was limited to the written sentence she was asked to comment.

[34] Recall Bates *et al.*'s (1995: 151) discontent mentioned earlier: "the Average Child is a fiction, a descriptive convenience". Is the "average rule" a fiction as well?

accord with the child acquisition data provided by Bassano *et al.* (2001: 125), who mention that children use 1st before 2nd person. Morin anticipates this objection and clarifies the status of his implication rules:

> ce ne sont pas des stratégies d'acquisition de la langue […]. Elles appartiennent en propre à la grammaire de l'adulte et ne se sont probablement mises en place que progressivement pendant les premiers stades de l'acquisition. (Morin 1987: 38)

If these implication rules belong to adults' grammar proper, then 1) what kind of strategies do children use while acquiring language? 2) When, how and why does the shift from child grammar to adult grammar happen? Since some of Morin's implication rules may not match children's data, then his hypothesized "gradual rule setting" procedure would need to be tested.

Let us take another more undisputable example. In an earlier model of his, Boyé (2000: 397) derives all French simple tenses from Imp's theme[35], thus yielding, among others, the following rules: a) Fut=Imp+(ə); b) Inf=Imp+(e). This, again, raises an order of acquisition issue. Indeed, Inf and Fut being acquired before Imp (Bassano *et al.* 2001 ; Kilani-Schoch 2003 ; Sabeau-Jouannet 1973), both a) and b) would be unavailable to the child, thus raising the same questions as above.

2.5.4. Be consistent with ordinary language use

In his description of Fut formation, Touratier compares Fut1-3 with PS1-3 inflections, that are indeed similar /e/, /a/, /a/ (see also Van Den Eynde & Blanche-Benveniste 1970: 417):

> Elles sont comparables à celles du passé simple de la première conjugaison:
> je chanterai, tu chanteras, il chantera; je chantai, tu chantas, il chanta"
> et l'on peut les décrire en disant que le futur est marqué par un segment /(ə)Ra/
> (Touratier 1996: 38-39)

As stated decades ago by Benveniste (1966: 237ff), PS is no longer used in conversational interaction in contemporary French, thus precluding the use of *tu* and *vous*. Even the most frequent French verbs (*être, avoir, aller, vouloir*, etc.) *never* allow PS2 and PS5 (see Blanche-Benveniste 2002: 21), although they still appear, to my knowledge, in all contemporary conjugation textbooks. What is then the scientific status of Touratier's comparison once we acknowledge that 1) PS is almost exclusively used in written French, and 2a) does not allow *tu/vous*, and 2b) almost never *je/nous*, and that 3) Fut is still a commonly used tense that allows all persons? To be relevant, such an asymmetrical comparison would need to be scientifically justified since ordinary speakers probably do not make this comparison.

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[35] Taking Pr4-5 as basis also goes against acquisition data.

3. Conclusion: "Wouldn't it be better to make the map conform to the yard?"

> ...In that Empire, the craft of Cartography attained such Perfection that the Map of a Single province covered the space of an entire City, and the Map of the Empire itself an entire Province. In the course of Time, these extensive maps were found somehow wanting, and so the College of Cartographers evolved a Map of the Empire that was of the same Scale as the Empire and that coincided with it point for point.
>
> *Of Exactitude in Science* (Borges 1954/1972: 141)

While describing languages, linguists, like other scientists, run into Borges's cartographers' epistemological dilemma:

i) be as accurate as possible
ii) be as concise as possible[36]

However this problematic situation is not the sole difficulty scientists run into. Language, as any scientific "object", is not directly observable, but needs to be theoretically reconstructed by linguists. A second major epistemological problem then arises in relation to i), and humorously summarized in Bill Watterson's comic strip:

Calvin and Hobbes (Watterson 2005: 407)

One of the greatest and most difficult challenges linguists have to face, as Hobbes (the tiger) wisely suggests to Calvin, is "to make the map conform to the yard" and not the other way round. Such an epistemological issue is mostly ignored in linguistics. Fradin (2003: 265), for instance, is one of the few linguists to tackle the question, but he ends up stating an

[36] This tension is summarized in Van den Eynde & Blanche-Benveniste's (1970: 406) explicit goal: "Le but de toute analyse est d'arriver à décrire une multitude de formes en partant d'un nombre restreint d'éléments et de règles de combinaison entre ces éléments, qui permettent de présenter ces formes comme 'prédictibles'"·

"epistemological disclaimer": "Le niveau conceptuel mis en jeu par les règles proposées ici est donc uniquement descriptif et ne prétend en aucun cas être causal". Why are linguists allowed to adopt such an epistemological stance toward their object? Could such disclaimers be used in mechanics, nuclear physics, medicine, etc.? Probably not. A "wrong" linguistic rule has no consequence whatsoever. It will never make a plane crash or kill human beings. Apart from conflicts resulting from differences in theoretical approaches, it is clear that nothing crucial is at stake in linguistics. But should this state of affairs allow us to proceed like Calvin and project our own theoretical conceptions onto language without ever questioning the legitimacy of such an epistemological position? No.

No matter what, it would probably be better to make the map conform to the yard…

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