

The Ideology of Linguistics: Frequently Asked Questions

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In a series of recent papers, Martin and Michiel have criticized what they call the “ideology” of linguistics (Stokhof and van Lambalgen, 2011a; see also Stokhof, 2007, 2011). The term refers to the deliberate idealization of language which plays an important part in many branches of linguistics, especially the more mathematical ones. In these branches, the object of study is a certain theoretical construct called “language” which tends to stand in a somewhat strenuous relationship to actual reading, writing, talking, and hearing.

Martin and Michiel argued that this idealization is different from the abstractions known from the natural sciences, like ignoring the effect of air resistance. Idealizations are not just pragmatic simplifications of an otherwise complicated system, but rather they play substantial part in creating the system in the first place. Since the very existence of our object of study thus relies on certain assumptions, it is a bit unclear what we are, in fact, studying.

This argument caused a bit of a stir, partly because of their choice of the loaded term “ideology” (see Stokhof and van Lambalgen, 2011b and the other papers in that volume). Surely linguistics is not Soviet quantum mechanics, or nazi biology? Do we really have to talk about false consciousness again?

In a way, yes: I think Martin and Michiel are spot on in their criticism, but it’s important not to mistake their point for a complete rejection of the legitimacy or possibility of linguistics. I do think that their choice of the word “ideology” is quite appropriate, but you need to put your right Karl Marx hat on to see why.

So what I’ll do here is to provide a little user’s guide to the ideology of linguistics. The discussion is based on some of Martin’s recent papers, but frankly much more on our many discussions about the history and philosophy of linguistics. I’ll explain what his point is to the best of my ability, filling in the blanks when I have to, and pushing the argument when I feel like it. Hopefully this strategy of shotgun scholarship will, when all the exaggerations cancel out, turn out to be a reasonably faithful representation of his ideas.

1 Does linguistics really have an “ideology”?

A good example of the kind of work which the ideology of linguistics is performing is the syntax/semantics distinction. This distinction is not a hard constraint imposed on linguistics from the outside, but an assumption that we have to agree on before it makes sense to have a science of syntax at all. It is, in this sense, a piece of “ideology.”

Chomsky seems to have been painfully aware of this, and he spent a lot of energy in his early work pushing the point. In *Syntactic Structures* (1957), for instance, he cited examples like the following as evidence that weird syntax and weird meaning are independent dimensions in the space of weirdness:

- (1) *Today I saw a fragile whale* (syntax good, semantics bad)
- (2) *The child seems sleeping* (syntax bad, semantics good)

Once this distinction got institutionalized, we could start “starring” sentences and rolling out a whole research program based on this new source of data, developing mathematical models for where the asterisks would go. If you did not buy into this assumption, such a research program would seem pointless or confused.

This does not necessarily mean that it’s a bad idea to make a distinction between syntax and semantics, but it’s important to realize how historically contingent that idea is. When a sentence was “ungrammatical” in the 19th century sense of the term, this was a matter of prescriptive prettiness, not of selecting a string of tokens from one set rather than its complement. It was only when Chomsky’s work started catching on that it came to seem natural to separate “not making sense” from “being ungrammatical” in his novel sense of the word (cf. Fig. 1).

Incidentally, as Martin pointed out to me recently, Chomsky lifted his ideas about recursion and rewriting systems from the logical positivists of his day,

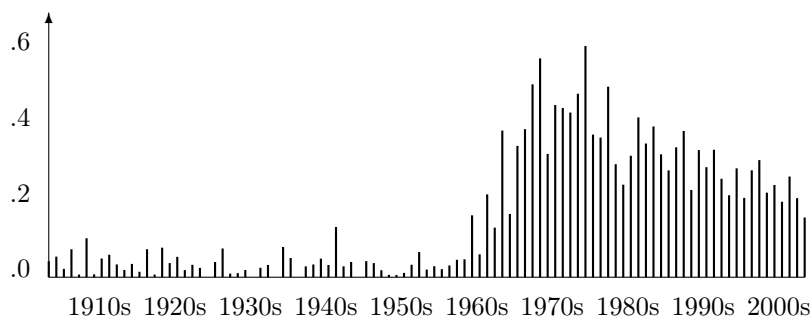


Figure 1: Frequency of the phrase *ungrammatical sentence* per million words, 1908–2008 (based on the Google Books corpus, cf. books.google.com/ngrams).

not from observations about language. His first academic paper was written in the notational idiom of the *Principia Mathematica* and published in *Journal of Symbolic Logic*. The first example sentence in the paper is ‘ab’ (Chomsky, 1953, p. 243).

2 What’s wrong with that?

There is nothing wrong with a simplifying assumption as such, but studying human beings is not like studying rocks and rivers. Human practices like talking, tipping, eating, biking, etc. are parts of everyday life, and they derive their meaning from the role they play in this larger context of lived life. Any theory which tries to cut this link will eventually have to cover up some facts.

For instance, one classic theory of human cognition is that you navigate through a task like ordering in a restaurant by means of a “script” which tells you how to handle common restaurant situations (Schank and Abelson, 1975). The problem with this idea is that scripts can be violated, but that people can handle even rather bizarre rule-breaches quite skillfully: If somebody chooses to rob the restaurant or answer all your questions with “Malkovich, Malkovich,” you can still make sense of your situation to a large extent.

This flexibility comes from your understanding of the larger context in which candles, lobsters, waiters, and money bills get their meaning. Because you perceive the world in this “mooded” and meaning-bestowing way, it appears in a very different light to you than to somebody who literally saw it as a pile of stuff with labels like “valuable” or “sentient being” randomly stuck onto it. But by definition, a formal theory has to approach the world like that.

So the problem with insisting too much on some formal theory of talking, tipping, eating, or biking is that the theory will systematically cover up some part of the larger picture. Mathematical models need to assume that the world only changes along certain dimensions specified in advance, but actual human life is open-ended in the sense that its ultimate purpose and value is always up for grabs. This means that we can’t ask any rigorous, scientific questions in the human sciences without first making a highly biased selection of features that we allow our “ideal person” to have (cf. Dreyfus, 1980). Any theory in the humanities is thus shipped with an implicit philosophical anthropology, and this is why it necessarily involves ideology.

3 How does that concern me as a linguist?

Admittedly, this is all pretty abstract, and it’s not at all clear that it has any bearing on linguistics. So I’ll try to illustrate why it matters with a couple of examples. (I’m afraid I already discussed these examples with Martin a couple of years ago, so no news for him here.)

Let’s pretend we’re real linguists, and that we’ve just noticed the interesting distinction between count nouns and mass nouns:

- (3) (a) **I have sister.*
 (b) *I have a sister.*
- (4) (a) *I've got sand in my socks.*
 (b) **I've got a sand in my socks.*

What's the system? Well, sisters are pretty discrete entities and can be easily counted, but sand is some pretty amorphous stuff with no natural boundaries.

Unfortunately, things are not so simple:

- (5) *Do you serve lamb here?*
- (6) *Calcium chloride is a salt.*

The difference is of course a matter of perspective: Some animals are foodstuffs, so you can have *more lamb left* just like you can have *more wine left*. But it will not take much dog-eating before you don't have *any more dog left*.

These apparently grammatical facts are thus incredibly sensitive to your extra-linguistic sense of what people do and why they do it. In fact, even very firm grammatical differences of this type are quite easy to break. Ron Langacker, for instance, "grinds" a couple of count nouns into mass nouns in the following way (Langacker, 2002, p. 73):

- (7) *After I ran over the cat, there was cat all over the driveway.*
- (8) *When he finished tunneling through the stone wall with his knife, there was hardly any blade left.*
- (9) (One termite to the other:) *I don't like shelf. I prefer table.*

From the perspective of a formal model of count nouns and mass nouns, these examples will most likely show up as weird and unsystematic anomalies. They are not a matter of linguistic processing as such, and a "linguistic" theory that accounts for effects like this would have to include a model of extra-linguistic experience.

4 Can't we just build a good context model?

This brings me to my second example: The problem computing the meaning of compound nouns like *olive oil* and *baby oil* (preferably without eating too many babies). This is more difficult than it seems, because the modifier involved in such compounds can play all sorts of roles in the final interpretation. In the two *oil* cases, for instance, it either specifies a raw material used in the production, or an intended end use.

One excellent theory of how to address this problem was proposed by James Pustejovsky (1991). He suggested that words come equipped with an internal structure which determines how they change meaning across contexts. He also

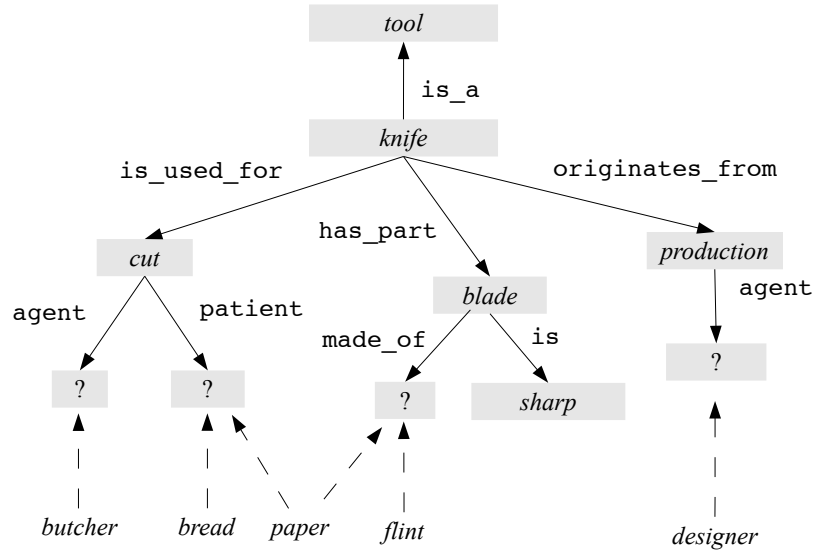


Figure 2: One hypothetical internal structure of the noun *knife* (cf. Johnston and Busa, 1999). In the bottom of the figure, a handful of potential modifiers of the word are trying to find reasonable places to do their modifying.

proposed, more specifically, that the internal structure of a noun consists of four variables: The intended use of the thing; its origin; its constituent parts; and its kind. Each of these could be more or less constrained, depending on the dictionary item.

So according to this theory, you understand a compound like *bread knife* by looking for some argument inside the word *knife* which can reasonably be set equal to *bread* (cf. Fig. 2). For instance, a knife has a *blade* made of something, so one option is to read it as “a knife whose blade is made of bread.” But since the blade is also *sharp*, this option is unlikely. You might thus continue your search by looking into the intended use of the knife, in this case a *cut* event. Cutting involves both an agent and a patient, so you could try sticking the *bread* into either of those two sockets — and hopefully, you would eventually decide that the bread is more likely to be cut than to be doing the cutting.

This is a nice theory, and it works well for a range of examples, but it has some problems too. Once we get past the most obvious examples, more complicated modifier-modified relationships gradually start cropping up:

butterfly knife, bird’s beak knife looks like a butterfly/a bird’s beak

folding knife, flick knife folding/flicking is a part of the usage

survival knife, hunting knife the usage is a part of surviving/hunting

kitchen knife, table knife the location of the usage is the kitchen/the table

factory knife the location of the production is a factory

fillet knife the product of the usage is fillets (in contrast to *steak knife*)

dinner knife the time of the usage is dinner

gold medal knife the production has provided the producer with a gold medal

pocket knife the size of the knife is such that it can be kept in a pocket

If we constructed a meaning representation flexible enough to capture all of these diverse relations, our search space would be very, very large. To get a sense of just how much ambiguity this would involve, consider some of the ways we could potentially interpret the compound noun *shit knife*: it could be a knife that either

- performs its function badly (cf. *shit bike*, *shit amp*);
- is bad in general (cf. *shit life*, *shit person*);
- is used for shit (cf. *shit trench*, *shit cloth*);
- is made of shit (cf. *shit stain*, *shit pile*);
- contains shit (cf. *shit diaper*, *shit water*);
- looks like shit (cf. *shit brown*);
- etc.

At best, the space of possible modifier–modified relations is very, very large. Other examples like *nano knife*, *memorial knife*, *letter knife*, *mammoth knife*, *stage knife*, and *test knife* give similar problems.

In fact, I think the situation even is a bit worse: There isn’t really any limit in principle to what kind of real-world relations that can be harnessed to produce new compound noun meanings. Imagine for instance what kind of set of relations the following meanings would have been drawn from:

- (10) *the wine bottle Basque* (= the Basque who previously gave me a bottle of wine to drink from; Hemingway in *Fiesta*, 1926)
- (11) *apple juice seat* (= the seat in front of the apple juice; Downing, 1977)
- (12) *one hour mama* (= omitted out of concern for the reader’s tender soul; Victoria Spivey in “One Hour Mama,” 1933)

I think examples like these indicate that the interpretation of compound nouns can literally draw on any intuition in your preverbal experience. This does not mean that we can’t have a theory of noun compounds, but it’s important to know from the start that such a theory will invariably neglect some sources of meaning.

5 But this only applies to formal semantics, right?

The real limits of the formal modeling of language does not lie in the computational paradigm, but in the difficulty of getting the right kind of information at the right time. People make their everyday choices based on a lifetime of social, bodily, and emotional experience, and their behavior can consequently be hard to rationalize if you don't have the right kind of first-hand experience.

For instance, after an interview on *The Daily Show* about the failed US banks, Jon Stewart thanked Elizabeth Warren (then head of the TARP oversight committee) by telling her:

That is the first time in probably six months to a year that I felt better. [...] that was like financial chicken soup for me. (April 2009)

This comment is hard to make sense out if you're not familiar with the American tradition of using chicken soup as a folk medicine against cold and other minor ailments. But even this kind of encyclopedic knowledge is not quite enough to reconstruct the kind of emotional attachment that goes with the memory of staying home under the blankets with a cup of warm soup. (Imagine for instance that he had said *penicillin* instead of *chicken soup*.) Even a clever information retrieval scheme that could squeeze statistics out of all of Wikipedia would have a hard time finding this needle in the haystack.

A similar example concerns the following sentence, which I showed to a friend in order to introduce to him to the mysteries of PP-attachment ambiguity:

(13) *The woman wanted the dress for her daughter.* (Wilks et al., 1985)

Thinking I was the linguistic expert in the room, I asserted that this could either mean that the woman “wanted the dress in order to give it to her daughter” or “wanted the dress which was (otherwise) intended for her daughter.” My friend, incidentally an anthropologist, pointed out that it could also mean that she “wanted the dress in exchange for her daughter.” Evidently, this reading only became accessible because of an unexpected interaction between grammar and life experience. A formal system could only predict such readings if it included a mathematical theory of whether it's OK to sell your daughter.

So even though Martin and Michiel are careful not to overstretch their case (Stokhof and van Lambalgen, 2011b), I think it's fair to say that the problems they point out exist in any branch of linguistics with ambitions of being “formal.” This applies any computational paradigm, including the probabilistic versions of whatever meaning representation you feel most comfortable with.

6 Anti-Conclusion

If you had been around in the late 19th century, you would have been able hear the sound of an “ideal person” being chiseled out in the newly founded human sciences. For instance, while he was crafting the “rules” for the new field of sociology in 1895, Émile Durkheim insisted:

The first and most basic rule is *to consider social facts as things*.
(Durkheim, 1982, p. 60)

In 1896, Wilhem Wundt was similarly carving out a new scientific object for himself, called “the mind”:

The concept of *mind* is a supplementary concept of psychology, in the same way that the concept matter is supplementary concept of natural science. (Wundt, 1907, p. 312)

Not surprisingly, it did not take long before Ferdinand de Saussure would argue that “Language is a well-defined object,” and that “Language is a system of signs” (de Saussure, 2013, pp. 14, 16). Within the span of a couple of decades, the human sciences thus invented most of the “objects” that they would spend the next hundred years studying.

This process was driven to some extent by the availability of new methods, but not much. A far more important factor was a deliberate choice of idealization which turned the old and familiar “person” into the new and exciting “subject.” And although trading off intuitive familiarity for mathematical rigor can often be a good thing, it always comes with a commitment to a particular static notion of rationality and normality in the human sciences. In this sense, a formal theory in the human sciences is always ideological.

I would have liked to sum up this argument by citing a certain philosopher that I think saw all of this quite clearly. But Martin always tells my reading of him is tendentious and controversial, and that I should tread lightly when I use his name. So instead of opening up that can of worms, I would to take this opportunity to introduce a different philosopher.

The name of this other philosopher is Ludwig Schmittgenstein. He is what I call my “private linguist,” which means that no one else can read his books, and that my interpretation of him is incorrigible. I keep his books in a little box that I carry around, and you can’t look into the box.

The single most important idea in the work of Ludwig Schmittgenstein is that meaning is rooted in “a way of life.” What this means is that your cognition of things, people, and sentences depends on a chain of deeper causes which goes all the way down to your most basic existential conditions. Hence, if you pretend you know how language works, you by implication also pretend to know how life works.

Once we get that connection into focus, we see the first dim outline of what the cartoon image of the “linguistic agent” leaves out. How this cardboard figure is cut out defines what the ideology of linguistics is about, and the first step towards dealing with that ideology is to see the difference between image and reality.

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