Andrea Bianchi   *Editor*

Language and Reality from a Naturalistic Perspective

Themes from Michael Devitt

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Michael Devitt

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About the Editor

Andrea Bianchi is an associate professor at the University of Parma. He has published a number of papers on various topics in philosophy of language and philosophy of mind, and is especially interested in foundational issues concerning language. His current research focuses on the relationships between language and thought and the nature of the primal semantic relation, reference. Among other things, he has edited *On Reference* (Oxford University Press 2015).

Chapter 1
Introduction – Michael Devitt at Eighty

Andrea Bianchi

It is difficult to deny, I believe, that during the last forty years or so Michael Devitt has been a leading philosopher in the analytic field. The purpose of this volume is to celebrate his many important contributions to philosophy on the occasion of his eightieth birthday.

Born to Australians in Kuala Lumpur, Malaysia, Devitt was initially raised in Sydney – and anyone who has had the chance to meet him knows just how Australian he is – but at the age of eight moved to England, where he spent all of his youth. There, after a passionate reading of Russell's *The Problems of Philosophy*, he started to become interested in philosophy. Back in Australia for various reasons, in 1962 he enrolled at the University of Sydney, where he majored in philosophy and psychology. In 1967 he moved to the United States (an unprecedented choice for an Australian philosopher) to take a Ph.D. in philosophy at Harvard University, where he had W.V. Quine as his supervisor and Hilary Putnam among his teachers. Back in Australia again in 1971, he taught at the University of Sydney for seventeen years, before returning to the United States to occupy a position first, in 1988, at the University of Maryland and then, in 1999, at CUNY's Graduate Center, which he contributed to making one of the top places for studying, and doing research in, philosophy. A tireless traveler, throughout his career Devitt continuously gave talks and participated in conferences all around the world, disseminating ideas within the philosophical community, fostering the philosophical debate, and building deep intellectual as well as human relationships everywhere.

Together with Quine, from whom he inherited his unabashed naturalism and the animadversion to the *a priori*, and Putnam, a thinker who had a deep influence on Devitt's philosophical development was Saul Kripke. In fact, in 1967 Devitt attended

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a series of lectures by the young Kripke at Harvard, which anticipated those on naming and necessity given at Princeton University in 1970 – as he likes to recall, he missed only one of them to take part in a rally against the Vietnam war. Impressed by them – he was among the first to realize how revolutionary Kripke's ideas were –, Devitt decided to work on the semantics of proper names and other singular terms (a topic to which he had been already introduced by C.B. Martin in Sydney) and elaborated his causal theory of reference, which brought him international fame. His Ph.D. dissertation, *The Semantics of Proper Names: A Causal Theory* (1972), was devoted to it, as well as his first philosophical article, "Singular Terms" (1974), his first book, *Designation* (1981), and dozens of later publications. In the following years, Devitt defended the related, and "shocking," idea that meanings can be causal, non-descriptive, modes of presentation, and began to be interested in the more general issue of the nature of language. This led him to argue, first, in *Ignorance of Language* (2006), against Chomskyan orthodoxy, claiming that languages are external rather than internal; and, second, in *Overlooking Conventions*, which is about to appear for Springer, against various forms of contextualism in the philosophy of language. On philosophy of language he also wrote, together with one of the contributors to this volume, Kim Sterelny, an opinionated and very successful introduction, *Language and Reality* (1987), whose title (which he did not like) inspired that of this book (which, alas, he likes no better).[1]

But Devitt's philosophical interests extend way beyond philosophy of language. He is famous for vigorously defending realism (in his second, successful, book, *Realism and Truth*, 1984), against various, once trendy, forms of constructivism – from Kant through Goodman and the "renegade" Putnam to post-modernism –, which are less trendy now perhaps thanks to his criticisms too. Moreover, he has always been interested in methodology and metaphilosophy: he has tried to get clear about the role and nature of intuitions, he has criticized the widespread idea that we may have *a priori* knowledge from a naturalistic perspective, and he has insisted on *Putting Metaphysics First*, as the title of a collection of his essays (2010) declares. And he has also contributed to philosophy of mind, advocating a version of the representational theory of mind, and, more recently, to philosophy of biology, where he has argued in favor of a version of biological essentialism.

I first met Devitt in April 2005. I had just come back to Italy from Los Angeles, where I had spent one year doing research at UCLA after finishing my graduate studies. Invited by the late Eva Picardi, he and Stephen Neale came to Bologna, the city where I was living at the time, to discuss the referential use of definite descriptions, a topic made famous by Keith Donnellan. I admit that I was quite surprised to discover that even outside California people were able to say sensible things on the subject. However, my human and intellectual relationship with Michael did not begin until some years later, when, in September 2009, we were both speaking at a

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[1] Just for the record, Devitt and Sterelny wanted to call their book *Language, Mind, and Everything*, inspired on the one hand by the opening of Quine's "On What There Is" and on the other by the Ultimate Question of Life, the Universe, and Everything in Douglas Adams' *The Hitchhiker's Guide to the Galaxy*. The publisher found the title too jocular.

conference on meaning organized by Alex Burri in Erfurt, Germany. We started to argue about reference, and we are not through with it yet. Afterwards, Devitt came various times to Parma (because of the quality of its food, he would probably gloss), to give talks and take part in workshops and conferences at my university. We have also frequently met elsewhere: in Bologna, in Rome, a couple of times in Barcelona thanks to another of the contributors to this volume, Genoveva Martí, a couple of times in Dubrovnik. And, more recently, in his wonderful house ("Versailles on Hudson"!) in Upstate New York. Although we disagree on various issues, as my contribution to this volume also witnesses, on each of these occasions I learned a lot from him. And, of course, it was always fun.

Most, if not all, contributors to this volume came to know Devitt much earlier than me. All renowned philosophers from all over the world, they are former students or colleagues, but first of all friends, of his. And they have all used the chance offered to them by this celebration of his eightieth birthday to add another twist to their, often long-lasting, intellectual exchange with him, engaging with many aspects of his philosophical work.

As should have become clear from what I have written so far, Devitt likes to argue, or, as they colorfully put it in Australia, "to stir the possum" (*Stirring the Possum* was indeed his suggestion for the title of this volume, a suggestion which, to his dismay, was eventually rejected because of its potential obscurity to non-Australian readers). Philosophy advances this way, he says. Thus, he wrote extensive replies to all the contributions to this volume, which, organized, like the contributions themselves, into five parts (*Philosophy of Linguistics*, *Theory of Reference*, *Theory of Meaning*, *Methodology*, and *Metaphysics*), are collected at the end of it and reveal his current stand on many of the issues he has been interested in during his long career. And I am pretty sure that the show will go on: many of these exchanges will continue, back and forth, for years. Thanks, Michael!

Part I
Philosophy of Linguistics

Chapter 2
Invariance as the Mark
of the Psychological Reality of Language

John Collins

> *Invariants are the concepts of which science speaks in the same way as ordinary language speaks of "things", and which it provides with names as if they were ordinary things.*
>
> Born (1953: 149)

Abstract Devitt articulates and defends what he calls the 'linguistic conception' of generative linguistics, where this position stands in contrast to the prevailing 'psychologistic conception' of Chomsky and generative linguists generally. I shall argue that the very idea of anti-psychologism *vis-à-vis* generative linguistics is premised upon a misunderstanding, *viz.*, the thought that there are linguistic phenomena as such, which a linguistic theory may target directly, with psychological phenomena being targeted only indirectly. This thought is incorrect, for the ontology of a theory is ultimately what is invariant over and essential to the explanations the theory affords. In this light, linguistic theory is about psychological phenomena because the psychological states of speaker-hearers are the invariances of linguistic explanation, and there are no such invariances that involve externalia. What ultimately counts as psychological itself is partly determined by the very kind of explanations our best theories offer. In a nutshell, the explanations of generative theories neither entail nor presuppose an external linguistic reality, but do presuppose and entail a system of internal mind/brain states the theories seek to characterise.

Keywords Noam Chomsky · Realism · Linguistic competence · Psychologism · Michael Devitt · Linguistic intuitions · Mental processes · I-language

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2.1   Introduction

The major meta-theoretical issue throughout the history of generative linguistics has been the ontological status or 'reality' of the posits of the various generative theories. The received view is that generative linguistics is a branch of psychology, a component of the cognitive sciences. In this light, if taken to be true, a given theory is read as specifying various 'psychologically real' properties, rather than properties of mind-external entities however else construed (social artefacts, platonic entities, etc.). Michael Devitt's book, *Ignorance of Language* (2006a), is the most developed and philosophically sophisticated assault on this received view, reflecting but improving upon the earlier attitudes of Katz (1981), Soames (1984, 1985), Katz and Postal (1991), Cowie (1999), and numerous others.

Devitt articulates and defends what he calls the 'linguistic conception' of generative linguistics, where this position stands in contrast to the prevailing 'psychologistic conception' of Chomsky and generative linguists generally. Such anti-psychologism amounts to the claim that generative theories are really about an external language such that, in the first instance, the theories' explanations pertain to the putative externalia that constitute the language, not the psychological (internal) states of speaker-hearers.

I shall argue that the very idea of anti-psychologism *vis-à-vis* generative linguistics is premised upon a misunderstanding, *viz.*, the thought that there are linguistic phenomena as such, which a linguistic theory may target directly, with psychological phenomena being targeted only indirectly. This thought is incorrect, for the ontology of a theory is ultimately what is invariant over and essential to the explanations the theory affords. In this light, linguistic theory is about psychological phenomena because the psychological states of speaker-hearers are the invariances of linguistic explanation, and there are no such invariances that involve externalia. What ultimately counts as psychological itself is partly determined by the very kind of explanations our best theories offer. In a nutshell, the explanations of generative theories neither entail nor presuppose an external linguistic reality, but do presuppose and entail a system of internal mind/brain states the theories seek to characterise.[1]

Devitt's book has attracted some strong criticism, but largely misdirected, according to Devitt, for the critics uniformly neglect his 'master argument'.[2] I

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[1] Some positions admit both externalist and internalist commitments, such as those articulated by George (1989) and Higginbotham (1991). By the lights of the arguments to follow, the externalist aspects of such positions are questionable insofar as they flow from the kind of reasoning that informs the straightforward externalist positions. There are other positions that defend the notion of an external language in opposition to the generative approach, but these tend to be animated by the kind of concerns Devitt makes explicit (e.g., Lewis 1975; Wiggins 1997).

[2] Thus: 'none of [my] critics pays much attention to my *argument* for rejecting the psychological conception. The failure to address arguments against the psychological conception is traditional' (Devitt 2006b: 574; cp. 2006a: 8). The critics Devitt has in mind are Collins (2006), Matthews (2006), and Smith (2006). Devitt repeated his charge at an 'Author meets his critics' session at the

shall (i) reconstruct and carefully analyse Devitt's 'master argument', which, according to Devitt, has so confounded his critics, and (ii) question its two principal premises.

First, though, we need to address how we ought to understand 'psychological reality' and 'reality' more generally, in the context of a theoretical inquiry.

2.2   The Very Idea of 'Psychological Reality'

Following Chomsky, generative linguistics is broadly conceived by its practitioners to be a branch of psychology, ultimately human biology. This conception rests on the notion that the human language capacity is a biophysical phenomenon, which, of course, gives rise to complex communicative, social, and historical arrangements; indeed, it is hardly implausible to think that human culture largely depends upon our shared linguistic capacity. Generative theories, though, seek to abstract and idealise from such massive interaction effects in order to target a supposed distinctive core linguistic capacity.[3] Thus, generative linguistics, in essential concert with other disciplines, seeks to explain the development and function of this capacity as an aspect of the human mind/brain. Such is what I mean by 'psychologism' in the linguistic realm. Of course, whether past or current theories have been successful in this endeavour is another matter.

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meeting of the Pacific Division of the APA (2007), by which time the benighted critics had swelled to include Collins (2007a), Higginbotham (2007), and Pietroski (2008):

> Smith [(2006)] and company do make some rather perfunctory attempts at [refuting the argument] … but they all fail dismally in my view... It is time that my Chomskian critics made a serious attempt to refute it. If the argument is mistaken, it should be fairly easy to say why: it is not an attempt to prove Fermat's Last Theorem!

Whatever the perceived failings of Devitt's critics, I trust the present paper is at least a meeting of Devitt's challenge.

[3] For example:

> Complex innate behavior patterns and innate "tendencies to learn in specific ways" have been carefully studied in lower organisms. Many psychologists have been inclined to believe that such biological structure will not have an important effect on acquisition of complex behaviour in higher organisms, but I have not been able to find serious justification for this attitude. (Chomsky 1959: 577 n. 48)

> [T]here is surely no reason today for taking seriously a position that attributes a complex human achievement entirely to months (or at most years) of experience, rather than to millions of years of evolution or to principles of neural organization that may be even more deeply grounded in physical law... [Language] would naturally be expected to reflect intrinsic human capacity in its internal organization. (Chomsky: 1965: 59)

> The faculty of language can reasonably be regarded as a "language organ" in the sense in which scientists speak of the visual system, or immune system, or circulatory system as organs of the body. (Chomsky 2004: 380)

Devitt (2006a: 9) suggests that a theorist's intention to demarcate a cognitive domain of inquiry offers little reason, by itself, for the conclusion that the technology of the theory (a grammar, let's call it) should be credited with 'psychological reality'. The move is 'fast but dirty', for '[i]t remains an open question whether the rules hypothesised by a grammar are psychologically real'. Devitt's thought here is that merely *intending* a theory, no matter how apparently successful, to be about *X* doesn't make it about *X*; it remains an open question that the theory might be true of some non-*X* domain. So, in particular, linguistic theory tells us about speaker-hearers alright, but it just doesn't follow that the posits of the theory are 'psychologically real'; the theory could tell us about speaker-hearers by way of being true of something else, where what a theory is true of should attract our proper ontological commitment, assuming we uphold the theory in the first place. Well, just what is it to be psychologically real? Devitt entertains a host of construals familiar from the literature of the past forty years; at its simplest, though, 'psychological reality' describes 'structures [that] are employed in speaking and understanding' (Chomsky 1975: 160, quoted by Devitt 2006b: 574). Devitt glosses Chomsky's description of structures being 'employed in speaking and hearing' as 'on-line' processing, the production of linguistic tokens (Devitt 2006a: 36; 2006b: 578; cp. Soames 1984: 154–156; 1985: 160).[4] For Devitt, as we shall see, 'psychological reality' just is the domain of what he calls 'processing rules'. So, Devitt's worry is that the mere intent to be offering a theory of the mind/brain does not suffice to credit the theory's posits with psychological reality; for, without further ado, it has not been established that the grammar subserves on-line linguistic production/consumption. With this lacuna unfilled, a grammar might reasonably be true of some non-psychological realm. Put another way, a speaker might 'behave *as if* her behavior were governed by' the grammar's posits, while in fact it is not (Devitt 2006a: 57). It follows that we are not entitled from the acceptance or, indeed, corroboration of a grammar alone to declare the grammar's posits to be psychologically real.[5]

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[4] The 'on-line' conception of psychological reality, although never defended by Chomsky, has been articulated, in some form or other, by many in the field; e.g., Levet (1974), Bresnan (1978), Fodor et al. (1974, 1975), Bever et al. (1976), Bresnan and Kaplan (1982), Fodor (1983), Berwick and Weinberg (1984), Soames (1984), and Pylyshyn (1991). The kind of 'transparency' model entertained by Miller and Chomsky (1963) did *not* take processing to be a criterion of reality for a grammar's posits, but merely suggested that there was a structural concordance between the two, a claim that can be elaborated in different ways without disrespecting the competence/performance distinction (cp. Berwick and Weinberg (1984) and Pritchett (1992)). Although Devitt accepts that 'on-line' processing is the mark of the psychologically real, given his 'linguistic realism', he also holds that a grammar need only be *respected* by the processing rules, i.e., that is all a grammar tells us about psychology. Construed internally, in the way I shall suggest below, 'respect' indeed suffices for a perfectly good sense of psychological reality independently of any theory of processing.

[5] Devitt's point here is inherited from Quine's (1972) suggestion that rule 'following', as opposed to 'conforming', involves consciousness of the rule. The distinction misses the obvious difference between behaviour being *explained* by a posited rule, regardless of consciousness, and behaviour merely conforming to any number of conceivable rules (Chomsky 1975). Devitt also echoes Soames's (1984: 134) thought that 'linguistic theories are *conceptually distinct* and *empirically divergent* from psychological theories of language acquisition and linguistic competence'.

Before we assess Devitt's 'master argument' for the conclusion that generative linguistic theories are, in fact, about something non-psychological, I have three main points to make about the reasoning just presented, one to do with nomenclature, one exegetical, another more substantial, which bears on the general question of what notion of reality is supposed to be informing thoughts of what a theory is *really* about.

2.2.1 Grammars and Psychologism

First, then, nomenclature. The notion of a grammar (particular and universal) is familiarly ambiguous between the linguist's theory and what the theory is about. As we shall see, Chomsky (1986) resolves the ambiguity by coining the term 'I-language' for the type of cognitive state he takes the relevant theories to be about; we may retain the term 'grammar' to designate the theories themselves that take I-languages as their objects. In this sense, a grammar's (/theory's) structural description of a sentence will be a hypothesis, not about a sentence as an external type (or external tokens of a type), but about the capacity of a cognitive system to (amongst other things) represent various external media (sound waves or ink marks, say) in terms of abstract syntactic, phonological, and semantic features, much as theories of vision generate hypotheses about how organisms represent visual scenes. Of course, to adopt this resolution of the ambiguity will make it hard for externalists about the object of inquiry to state their claims coherently, as linguistic externalia on Chomsky's conception will simply be dead sounds or gestures, as it were, not anything *linguistic* at all; the theory is about the cognitive resources that lend the

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According to Soames, the first claim of conceptual distinctness rests upon linguistic theory being animated by 'leading questions' that are independent of psychology and the second claim of empirical divergence rests upon the clear implausibility of taking the rules and principles posited by syntactic theories to be the actual causal springs of linguistic behaviour. As we shall see, the first claim amounts to a stipulation in favour of an externalist notion of language (the 'leading questions of linguistics' are open to both externalist or internalist construal; the choice between them cannot be decided by a priori fiat). The second distinction rests upon a conception of the relevant psychology as restricted to speech production/recognition. It is perfectly sensible to attempt to delineate the abstract structure the mind/brain realises without thinking that one is thereby specifying the actual causal processes involved in linguistic processing, whatever that might mean. Besides, it is not even the case that generative theorists have sought psychological theories in Soames's sense. Soames (1984: 147–151) appears to be confused on the competence/performance distinction. He imagines that the traditional cognitivist approach is to insulate competence (narrowly construed) from any data from processing; competence is merely a theory of the 'grammatical judgements of idealized speaker-hearers' (1984: 148 n. 19). Little wonder that Soames (1984: 154–155) sees the linguist as facing a 'dilemma': on the one hand she seeks a psychological theory, on the other she insulates herself from the relevant data. In explicit contradiction of this reasoning, the first chapter of *Aspects* (Chomsky 1965) seeks to establish the empirical integration of performance and competence, without competence itself being competence to produce or consume anything. Competence is a standing state, abstractly specified, that enables the integration of distinct capacities called upon in linguistic behaviour (for discussion, see Collins 2004, 2007b).

externalia a linguistic life, not the externalia themselves. In order, then, to at least be able to state the conflicting interpretations of generative theory, I shall, *pro tem*, use 'grammar' in the theorist's sense, and leave it open what the object of a grammar actually is – an I-language or something external (I shall return to this issue below).

My second point about nomenclature concerns 'psychologism'. After Frege (1884/1950), 'psychologism' is most often used abusively to denote any account that confuses the logical or the properly semantic with the psychological, which is understood to be a local, contingent mental set-up, a mere subjective matter, which is constitutively unable properly to realise the normative, logical, or modal character of thought. It would be far beyond my present scope adequately to discuss any of the many issues that attach to psychologism so construed. Two quick remarks will have to suffice.

First, as already indicated, by 'psychologism' in the positive sense I shall employ, I do not mean any thesis about logic, normativity, meaning, concept possession, or the like; all I intend is that linguistic theory is concerned with the mind/brain, in a sense to be explained, as opposed to patterns of behaviour or some external media of symbols and signs. By such lights, one may happily accept the anti-psychologism of Frege and others who followed him. Of course, if the anti-psychologism that prevailed throughout much of twentieth century philosophy is extended to a kind of transcendental claim, whereby the philosopher a priori judges what is and isn't possible in empirical inquiry, then the thesis should be flatly rejected.

Secondly, to say that linguistic theory is psychologistic is not to suggest a reductionist attitude towards the relevant linguistic kinds. This will be a crucial feature of the following. It is perfectly coherent to view linguistic kinds as specified in a theory as essentially abstract, *sui generis* (Chomsky 1987). The theory will still be psychological if it only explains psychological phenomena.

2.2.2   Chomsky on Psychological Reality

My initial exegetical point pertains to Devitt's reading of Chomsky. *Pace* Devitt (2006a: 64), Chomsky has *not* 'persistently suggested' a processing conception of 'psychological reality'; on the contrary, Chomsky's (1955–56/75: 36) use of the notion comes from Sapir, and Chomsky has been persistently leery of its standing, if understood as being more substantial than the bare idea that linguistic theory targets psychological phenomena for its explananda. So, if a grammar is a cognitive theory, then, of course, the posited structures are understood to be 'employed' in cognitive activities. It does not follow, though, that such cognitive theories are ones of processing (production/consumption of tokens), or, in Soames's (1984) terms, that there is an 'isomorphism' between the grammar and processing rules; indeed, such a consequence would contradict Chomsky's position in *Aspects*, which explicitly separates competence as the object of theory from on-line processing (1965: 8–9). A competence theory is to be thought of as the abstract specification of a function (lexical items to complex structures) that imposes a set of conditions upon

processing, but is not a theory of the processing itself or reducible to it. By 1980, Chomsky (1980a: 106-109) diagnoses the appeals to the 'mysterious property' of psychological reality as an undue insistence that certain special kinds of evidence (e.g., from parsing or neurology) are required to establish that the posits of an otherwise accepted (evidentially supported) theory are real.[6] Of course, we should like as much convergent evidence as possible, but if doubts over the psychological reality of certain theoretical posits boil down to just a concern that a certain kind of evidence is missing, then there is no issue about reality at all; the theory simply remains unsupported rather than true of some other reality.[7] I think Chomsky's deflation of the issue is in essence correct, but it misses a crucial step by not offering a positive construal of what psychological reality a competence theory might have, given the kind of theory it is, i.e., given that it is not a processing theory. That is, the sceptic of the psychological reality of linguistic posits is liable to think, 'Bother different kinds of evidence! If a competence theory does not make claims about processes, then it is not a psychological theory, and so, if true, it must be true of something other than psychology'. Chomsky resists this urge to treat competence as really a form of processing, if a competence theory is to be psychologically real, but he leaves those with the urge unsatisfied. The way to bring resolution here is to offer a theory-relevant notion of 'reality' in general, from which it follows that linguistic theory is psychological notwithstanding the fact that it is not a processing theory. This takes us to the substantial issue of what we should mean by 'reality' when assessing a theory.

2.2.3 Minimal Realism

The following conceptual claim seems to me unremarkable when we are not dealing with linguistics:

Conceptual Thesis: If a theory *T primitively explains D*-phenomena, then at least some of *T*'s posits are *minimally real* over *D*, i.e., a theory is about what it explains.

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[6] Of course, not every term of an evidentially supported theory is understood to correspond to a real element of the domain; many elements will be wholly theory internal and at a given stage of inquiry it might not be clear what is real and what is not. This kind of complication, however, holds for any empirical inquiry, and poses no special problem for linguistics in particular. See Harman (1980) and Chomsky (1980b) for discussion.

[7] Although my focus in this paper is on intuitive evidence, for that is the locus of much of the philosophical disputes, it bears emphasis that it is Chomsky's long-standing position that 'discoveries in neurophysiology or in the study of behaviour and learning... might lead us to revise or abandon a given theory of language or particular grammar, with its hypotheses about the components of the system and their interaction' (Chomsky 1975: 37). In general, 'We should always be on the lookout for new kinds of evidence, and cannot know in advance what they will be' (Chomsky 1980a: 109). For overviews of the relevant evidence far beyond intuitive data, see, e.g., Jenkins (2000, 2004) and Anderson and Lightfoot (2002).

Let the following definitions hold:

Primitive explanation: *T primitively explains D* iff *T* explains *D*-phenomena inde-
  pendently of other theories, and *T* does not explain anything non-*D* without
  being embedded in a larger theory. *T* is explanatorily invariant over *D*.
Minimal reality: A theory's posits are *minimally real* over *D* iff they are interpreta-
  ble (not mere notational) elements of evidentially supported theories that explain
  D-phenomena.

The thesis is unremarkable for it claims nothing more than that at least some of
the posits of successful theories are counted as 'real' over some domain when the
theories actually explain the relevant phenomena and that is all they explain on their
own. Let's consider two familiar examples from physics. We may say that Newtonian
mechanics (or the classical form via Lagrange) primitively explains phenomena for
which the classical concepts of mass and force apply in the above sense. So, mass
and force are presupposed in every explanation, and the theory doesn't explain any-
thing beyond the application of these concepts without additional resources. Thus,
Newton was led to his theory by consideration of the orbit of Earth's moon, but the
theory does not primitively explain the orbit, i.e., the theory says nothing about the
particular mass of the moon or its distance from Earth or whatever masses might be
affecting it; the theory is invariant over such contingencies. Otherwise put, even if
there were no Earth or moon, or their masses and relative distance were different
from what they are, the theory would not be refuted. All the theory primitively
explains is the interaction of mass with force, not why we find the particular masses
we do and their relative distances from one another. In such a sense, the theory is
only minimally committed to certain kinds of interactions, given mass and force.
For another example, consider the development of the theory of electromagnetism
in the mid to late nineteenth century. The theory takes *fields* to be 'physically real',
for the field equations primitively explain electromagnetic phenomena. On the other
hand, it is not at all standard to take *potentials* or *lines of force* to be physically real,
for they explain nothing that the fields do not explain. That is, while we can appeal
to electric potential, say, describing the voltage carried by a wire, we know that it is
not the potential itself that explains the current, for it is not invariant relative to the
field. It is somewhat analogous to measuring the height of a mountain relative to
sea-level as opposed to the lowest point of the Earth, or some other arbitrary point.[8]

It bears emphasis that I do not intend the notion of 'minimal reality' to decide on
any issues in the philosophy of science as to the ultimate reality of fields or anything
else; on the contrary, the expression describes those putative entities and relations
towards which is directed one's *general* philosophical position, be it empiricist,
realist (with a capital 'R', if you like), structuralist, or something else. To be 'real'
in this sense means that the posit is not arbitrary, conventional, or merely notational,
but is an invariant feature of the theory's explanations and so is counted as real,
insofar as the theory is deemed true or successful. The present point, then, is simply

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[8] See Lange (2002: ch. 2) for a good discussion of these issues.

that one can be minimally realist about fields, but not potentials or lines of force, say, independently of any wider commitments about what such reality amounts to in some more metaphysically robust sense. My claim is that linguistics enjoys the same status as physics in this regard; linguistics need clear no extra hurdle in order for us to count its posits as real for the purpose of understanding the nature of the explanations and ontology of the science of the domain at hand. So, here is the substantive thesis (which mirrors one for field theories and electromagnetic phenomena):

Substantive Thesis: Generative theories primitively explain psychological phenomena.
Consequence: The posits of generative theories are psychologically real in a sense that concerns the interpretation of scientific theories.

Devitt is perfectly right, then, that it 'remains an open question' what structures govern behaviour, have their hands on the causal steering wheel. But generative theories, qua competence theories, are not directly concerned with the governance of behaviour. This does not affect their psychological status, however, for they independently (/primitively) explain nothing non-psychological and do explain phenomena that are uncontroversially psychological. That, at least, will be the claim I shall seek to substantiate.

2.2.4 General Remarks

Before we consider Devitt's 'master argument', some general morals can be recovered from the preceding discussion. Lying behind the doubts about the psychological reality of a grammar's posits must be some selection of the following thoughts: (i) linguistic theory does not primitively explain psychological phenomena; (ii) to be genuinely psychological, linguistic theory must be rendered as a theory of processes or neuronal organisation; or (iii) the reality of psychological posits demands the satisfaction of a priori conditions or a ranking of the significance of different kinds of evidence, where both the conditions and ranking are peculiar to psychology. I think we can dismiss the third thought, for I take no relevant party to be happy with such a methodological dualism (this is the essence of Chomsky's deflationary attitude to the issue). We are left, then, with the first two thoughts. The second thought is really contingent on the first thought; for if a grammar in fact explains only psychological phenomena, then it is just a semantic stipulation to claim that the grammar remains non-psychological merely because it is not a processing theory. At any rate, if a grammar's explanatory domain were psychological, then even if one thought that a psychological theory must be one of processing, the idea that linguistics targets externalia wouldn't be advanced any. One would simply be left with a problem of how to classify linguistics and how its claims relate to a likely processing theory. The crucial thought, therefore, is the first one. It is only this thought that leads one to be genuinely sceptical of the psychological status of linguistic theory, because if the thought is true, then a grammar will not primitively

explain psychological phenomena, which is just to say that a grammar is really about something other than psychology, even if it can be used, in concert with other theories, to explain such phenomena (the explanation will be indirect, non-primitive). As mentioned above, tackling these issues via Devitt is especially apt, for Devitt's argument is the most elaborated version of linguistic anti-psychologism in the literature and can be read as a distillation of the thought that there is something other than psychological phenomena that a grammar targets.

2.3   Devitt's 'Master Argument'

Devitt (2006a: ch. 2) does not present an argument as such, rather (i) he offers three general distinctions that are intended to pertain to representational systems in general; (ii) he purports to show that the distinctions apply to language as conceived by generative linguistics in particular; and (iii) he concludes that the distinctions as so applied support a 'linguistic reality' construal of generative linguistics rather than a psychological one. Here is my reconstruction of Devitt's line of reasoning.[9]

(DA)
(1)   a. There is a distinction between 'the theory of competence [and] its outputs/products or inputs' (2006a: 17).
        b. There is a distinction between 'the structure rules governing the outputs of a competence [and] the processing rules governing the exercise of the competence' (18).
        c. There is a distinction between 'the respecting of structure rules by processing rules [and] the inclusion of structure rules among processing rules' (22).
(2) These general distinctions apply to language as conceived by generative theories.
(3) Therefore:
        a. The theory of linguistic competence and its processing rules is distinct from the theory of the structure rules of the linguistic expressions that are the product of that competence.
        b. The theory of structure posits rules that the competence respects, but the rules need not be involved in processing.
(4) A grammar is best interpreted as a theory of the structure rules of linguistic expressions, not of linguistic competence.
(5) Therefore, a grammar is about linguistic reality (structure), not psychological reality.

Devitt (2006b: 576–577) encapsulates this argument as a challenge:

If the psychological conception of linguistics is to be saved, there must be something wrong either with the distinctions [(1a-c)] or their application to linguistics [(2)]. It's as simple as

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[9] Devitt offered me something very similar to this argument in personal correspondence.

> that. And if the problem is thought to lie not with the distinctions but with their application
> we need to be shown how human language is relevantly different from the bee's dance.

In line with Devitt's challenge, for the purposes of my riposte, I shall only tackle the crucial premises (2) and (4); that is, I shall grant that Devitt's three distinctions listed under (1) are in good standing for at least some non-linguistic systems (maybe the birds and the bees and the blacksmiths), but not for language in the form Devitt presents the distinctions. With the distinctions correctly construed, the conclusion does not follow, i.e., (5) is false. Thus, in terms of Devitt's challenge, I shall primarily be questioning the application of the distinctions to language as conceived by generative theories, and leave unmolested the idea that the distinctions might apply elsewhere beyond language.

It bears emphasis that the conclusions I seek to establish by way of challenging Devitt's argument do not reflect any general metaphysical orientation; I reject linguistic externalia, not because they are metaphysically outrageous, or because I am inclined towards some species of idealism, but simply because they are explanatorily otiose: they neither constitute phenomena to be explained nor explain any phenomena.

2.4   Questioning Premise (2): Applying the Distinctions

Devitt (2006a: ch. 2) presents his distinctions via a motley set of cases, from von Frisch's dancing bees, via logic machines that spit out theorems, to blacksmiths and their horseshoes. The general idea is this: *how* a system (a bee or a blacksmith) manages to produce its outputs is one thing; the structure or properties of those outputs is another thing. Still, the processing mechanism that determines *how* the products are produced *respects* the structure of the outputs insofar as they are its outputs. For example, von Frisch gave us a splendid theory of the information communicated by a honeybee's dance. This is a theory of the structure rules alone, for von Frisch didn't tell us how the bees produce the dance; mind, however the bees do their thing, the enabling processes respect the structure of the dance, for that is what the bees' mechanism is for, to produce a structure that may carry the appropriate information about the presence of nectar relative to the position of the hive. Likewise, a logic machine might follow all kinds of procedures in its production of well-formed formulae, but we have programmed it so that it respects the structure rules we have invented (e.g., our definition of a well-formed formula of first-order logic and what counts as validity). Devitt suggests that the same holds for language (cp. Soames 1984). We have a competence that produces external objects (sound waves, hand gestures, inscriptions, etc.) that constitute a linguistic reality. Our linguistic theories are about the structure of these objects under conventions of use that fix what is to count as nouns, verbs, etc., and their phrasal projections with all the attendant syntactic complexity. Linguistic theory is not about the internal processes or states of speakers that produce the strings that have complex high-level grammatical

properties; it is about such strings themselves. Still, the processes or mechanisms that do produce and consume the strings *respect* the linguistic properties of the strings, properties that linguistic theory is about.

Even if we grant these distinctions for the bees, the machines, and blacksmiths, without further ado, it does not follow that the distinctions apply to language; after all, we have here nothing but analogies. Furthermore, the distinctions appear not to apply to the mammalian visual system or the immune system, say, neither of which produce external products such as horseshoes. Perhaps language is more like vision in this sense. Besides, even if one were inclined to think that the distinctions do apply to language, it would be nice to see precisely how they do. Devitt (2006a: 29–30), for sure, is aware of the lacunae. He offers a single substantive reason to think that the analogies are a compelling basis to think that his process/structure distinctions apply to human language. He writes:

> How could we make any significant progress studying the nature of competence in a language unless we already knew a good deal about that language? Just as explaining the bee's dances is a prerequisite for discovering how the bee manages to produce those dances, so also explaining the syntax of sentences is a prerequisite for explaining how speakers manage to produce those sentences. (Devitt 2006a: 29)

Devitt's thought here is that if linguistics on its psychologistic construal is worthwhile, then so must be linguistics on his construal, for both construals require a clear conception of the structure rules that are evident in (or at least recoverable from) the products of competence prior to inquiry into the psychological processes that produce such products. If this is so, then Devitt's three distinctions appear to apply, which, in essence, simply distinguish structure from psychology, with the latter respecting the former.[10]

If one were already convinced of the existence of a linguistic reality such that a grammar is a theory of it, then Devitt's analogical reasoning might bolster one's conviction.[11] But we precisely want a reason to think that there is such a reality that is relevant to linguistics and we are not given one here: Devitt's argument reads his 'linguistic reality' into the metatheory of generative theories, as if the linguists' appeal to structure must be about external structure, given that only processing rules are internal. I don't imagine, of course, that Devitt is unaware that his distinctions presuppose what is in contention. His reasoning appears to be that since the distinctions are general, they enjoy default application to language as generatively

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[10]This line of reasoning is equivalent to that of Katz (1981: 70–73, 81–83) and Katz and Postal (1991: 524–525), who argue that a conception of a language must be prior to a conception of the putative underlying psychological states, for any evidence on such states must be *indirect* relative to *direct* evidence from the language itself. Soames (1984: 140) makes the same point, suggesting that psychological evidence is 'indirect' given a fixed 'pretheoretical' conception of language. In a related vein, Wiggins (1997: 509–510) claims that any psychological inquiry into 'speakers' 'presupposes the results' of a non-psychological inquiry into language.

[11]Of course, there is a reality of ink marks, hand gestures, pixels, etc. The only issue is whether such a heterogeneous domain supports properties of the kind that concern linguistics, where these properties might *depend* upon the human mind/brain but not be part of it.

conceived. Devitt's burden is to show that they do in fact apply to language; the burden of his opponent is to show that they don't. The above quotation provides a challenge to Devitt's opponents, for sure, but, I shall suggest, the distinction between processing and structure is a distinction internal to cognition, not between cognition and some other putative linguistic reality. Before I spell out this thought (§2.4.2), it is worthwhile to question the analogical nature of Devitt's reasoning here.

2.4.1   Chomsky and Devitt's Three Distinctions

As we saw above, Devitt's distinctions do apply to numerous systems, but they also fail to apply to numerous other systems, such as the 'organs' that Chomsky favours for his own analogical purposes. Moreover, Chomsky is pretty explicit in rejecting all of the distinctions, as Devitt construes them, precisely because they do presuppose an external 'linguistic reality'. In short, Devitt's distinctions might have *some* generality, but they are hardly a neutral, default conception of a cognitive system or other organic systems. Let us briefly see this.

   The first distinction is between a competence system and what it produces. Famously, Chomsky (1965: 3–4) does make a competence/performance distinction, but it is not Devitt's distinction. For Chomsky, the distinction is between internal systems, some of which govern speech production and comprehension, and others that independently constrain such processes, but might be systematically misaligned with them for independent reasons (more on this below): 'To study actual linguistic performance, we must consider the interaction of a variety of factors, of which the underlying competence of the speaker-hearer is only one' (1965: 4). In this light, what Devitt calls 'competence', Chomsky would call 'performance', for Chomsky's notion of competence by itself does not relate to the production of anything at all, let alone external tokens of strings. 'Competence' designates what a speaker-hearer knows in the abstract sense of conditions that apply to performance, but which hold independently of any production or consumption activity. Insofar, then, as Devitt's 'structure rules' demarcate competence, they do not describe external types that internal processes respect, but rather abstractly specify internal factors that enter into an explanation of the character of the performance in concert with other language-independent factors. Indeed, Chomsky has long been keen to point out that most uses of language are internal, integrated into thought, entirely lacking any external garb (Chomsky 1975, 2012; Hauser et al. 2005). For sure, the ensemble of systems does produce acoustic waves, hand gestures, inscriptions, etc., which we consume *as* language, but the rules/principles of the grammar do not have application to them in the first instance, as if it were the properties of the modalities of language use that linguistics targets. A grammar is supposed to explain the character of our capacity to produce and consume material *as* linguistic, not merely to describe the result of the capacity (the input and output) in linguistic terms. We shall return to this point shortly; *pro tem*, my present moral is twofold. First, Devitt's distinction between competence and its product presupposes an external linguistic reality,

which is currently in dispute. Secondly, Chomsky *does* distinguish competence from any potential products, but not in such a way as to presuppose a 'linguistic reality', for the products are massive interaction effects that only have a structure understood relative to a cognitive system that may produce or consume them *as* linguistic; they don't possess a structure that internal states *respect*.

Devitt's second distinction is between 'processing rules' and 'structure rules'. Again, Chomsky does make some such distinction, for his claim is not that the rules/principles of a grammar are an account of the mechanism that produces particular performance events. A grammar is construed as an abstract specification of the function (in intension) the human mind/brain realises, without any accompanying assumption as to how the function is realised.[12] Adopting Devitt's terms, we may say that a grammar is of *structure* that the mind/brain *respects* in its *processing* (consumption and production) of acoustic waves, hand gestures, etc., but such external material does not possess the hypothesised structure. We shall get to Devitt's notion of *respect* shortly, but even on the sketch given, it should be obvious how processing and structure are not two distinct realms that require an external (as opposed to an internal) relation between them. They both relate to internal systems that set both gross and fine-grained constraints on linguistic behaviour. For instance, we can decide what sentence to use on an occasion, but we can't *decide* to speak or understand Spanish or Navaho, if we were just to try hard, or were really smart. Also, once a competence (structure rules in Devitt's sense) is acquired, it sets fine-grained constraints on what we can process. Consider, for example, the following case:

(1) a. *What did Mary meet the man that bought?
    b. (What x)(Mary met the man that bought x)

Here we see that (1a) has a potential interpretation that is perfectly coherent, but we just cannot interpret the string in that way. We shall consider other cases of this kind of phenomenon later. The present moral is that a grammar seeks to explain the constraints our competence places on the interpretations we can associate with 'vehicles' (sounds, etc.), where these constraints are not exhausted by or explicable in terms of the non-linguistic systems with which competence interacts. It is in such a sense that competence may be viewed as a body of 'knowledge' that is 'used' by independent systems, rather than being an abstraction or idealisation from those systems. Just how we are to understand this relation of constraint between competence and performance remains highly problematic, but the bare distinction is not one that Devitt is questioning.

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[12] For example:

> We do not know for certain, but we believe that there are physical structures of the brain which are the basis for the computations and representations that we describe in an abstract way. This relationship between unknown physical mechanisms and abstract properties is very common in the history of science... In each case the abstract theories pose a further question for the physical scientist. The question is, find the physical mechanisms with those properties. (Chomsky 1988: 185)

What might be leading Devitt astray is a conflation of formal rules of generation with putative processing principles. In a formal sense, the rules that *strongly* generate structures will be equivalent to structure rules in the sense Devitt appears to be using the notion. This follows from the mathematical equivalence of membership conditions on a recursively enumerable set and a set of rewrite rules with a closure condition. Strings understood *weakly* (i.e., independent of a particular system of generative rules) have no inherent structure at all. Let us consider a toy example, which suffices to make the general point. Let the string 'aabb' have the structure '[$_Z$ a[$_Z$ ab] b]' because it was generated by the rules:

 (i) $Z \rightarrow ab$
(ii) $Z \rightarrow aZb$

The same string can also have a distinct structure '[$_Z$ [$_Z$ [$_Z$ aa] b] b]' because it was generated by a different pair of rules:

(iii) $Z \rightarrow aa$
(iv) $Z \rightarrow Zb$

So, a string understood as strongly generated is a formal object, as it were, with an intrinsic structure that reflects the rules that generate that object as a member of a class of structures that the rules define. From this perspective, strings themselves have no structure at all and do not acquire any structure as if they could carry the structure with them independently of the rules that define the string as a member of the consequence class of the rules. Still, if we were to think of bare strings as externalia and the rewrite rules as processing rules, then one could be misled into thinking that the rules exemplified produced strings that do carry the structure indicated. Yet that just is to be confused about the character of the rules. The rules are all structure rules (in Devitt's sense). They generate a set of structures that are usable to characterise strings as meeting certain conditions and so as belonging to linguistic types, but they do not produce any strings at all, and no string acquires, still less retains, a structure from the rules. Viewed in terms of strong generative capacity, the set of strings a grammar weakly generates is a pointless abstraction, a striping away of all but linear information to leave a concatenation of symbols. The reverse does not hold. Viewed weakly, a grammar generates no structure at all, and so no structure can be abstracted from it.

Devitt's third distinction is between processes *respecting* structure, and structure being included in the processing. Again, Chomsky cleaves to such a distinction, but not in Devitt's sense. The processes of the brain respect the grammar insofar as the grammar proves to be explanatory of cognitive phenomena; just how the grammar relates to brain states understood at a different level of abstraction (e.g., neuronal organisation) is an open question about which we know very little. Respect, in this sense, just means 'realise'. For Devitt, respect appears to be an external relation between structured outputs (external entities) and processing states. According to Devitt, the outputs clearly acquire their structure from the processing, wholly or in part, but somehow retain the structure like horseshoes on the floor of the smithy. To be frank, just what Devitt's notion of 'respect' amounts to remains obscure, but the