

Sound of Reference

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Abstract

Noam Chomsky has recently proposed that human languages are basically designed for construction of inner thoughts so that individual humans can plan ahead, thus giving selectional advantage to the species. The sound of language in this view is ancillary, it is meant only for the externalization of thought. However, the thought-only use of language will not have survival value if the human mind created mostly fictions. It is in the real connections with the world—reference—that our plans and goals have a chance. What are the prospects for achieving reference in a thought-only view of language?

The topic will be discussed with a focus on what philosophers call ‘Singular Terms’ that enable a language-user to pick out, identify, or otherwise refer to an individual object. The presence of singular terms in human language not only gives a uniquely human shape to human singular thoughts, it ensures that such thoughts are shared between conspecifics. The sound of singular terms is essential for human language, it is not ‘ancillary.’

Sound of Reference

Noam Chomsky's work on language has two distinct and relatively independent parts. The first part consists of developing a formal theory which explains the grammatical properties of languages. In recent work, it has been proposed that the architecture of human grammar consists of a lexicon which is a collection of lexical items, informally known as words, a generative device called 'Merge' that combines lexical items without bound, and two interface systems for sound (sensorimotor, SM) and meaning (conceptual-intentional, CI) (Berwick and Chomsky 2016). The system generates the digital infinity of structured sound-meaning correlations. In this paper, except for occasional mention, I will be largely unconcerned with the properties of the grammatical system.

The second, informal part of Chomsky's work consists of a series of general observations on the overall nature and function of human languages, and how they differ from other communication systems. For example, in recent years, Chomsky has repeatedly claimed that human languages are primarily designed for construction of 'inner thoughts', such as possible worlds and cognitive images. These inner thoughts enable individuals to plan ahead; this is the selectional advantage of the species. For this primary purpose, the computational processing from the lexicon to the CI system is what the design of language is basically for. In contrast, the sound system, that is the computational processing from the phonological component of the lexicon to the SM interface, is 'ancillary' in the sense that this system may be viewed as added to the basic language-system as an afterthought for externalization of thoughts (Chomsky 2007; Chomsky and McGilvray 2012; Chomsky 2015; Huybregts 2017).

Mark Hauser (2009) in fact suggests that ‘language evolved for internal thought and planning and only later was co-opted for communication’. The suggestion implies that there was a period after the emergence of language in which the creature endowed with language could use it only for construction of thoughts silently; the sound system was added later to enable the creature to share her thoughts with her conspecifics. I will argue that the thought-only view of language fails to incorporate a familiar aspect of singular reference which is a significant function of language. Thus, insofar as this aspect of singular reference contributes to human thought, the processing of thought in a thought-only conception of language will also remain inadequate to that extent.

The mention of reference as a linguistic phenomenon in connection with Chomsky may sound puzzling because Chomsky has long maintained that human languages do not have a referential/denotational relation with anything either internal or external to the mind (Chomsky 2000). In that sense, human languages do not have a semantics, they only have syntax and pragmatics. It may be argued then that we cannot complain about the failure to accommodate some notion of reference within the Chomskyan conception of language.

There is a distinction between two notions of reference in the functioning of language. For Chomsky, reference means some sort of a direct relation between a word and some extra-linguistic object, typically something in the physical world; semantics is then viewed as the study of these direct word-object relations. Suppose we agree with Chomsky that human languages, unlike animal communication systems, do not have a direct reference relation between a sign and some object. For example, although the word *London* mentions a city located in a definite physical space, there is no referential relation in the Chomskyan sense between the word

London and that physical space; we may as well say that London was rebuilt across the river (Chomsky 2000).

However, if we think of the notion of reference somewhat broadly to indicate our ability to talk about the world, reference must be taking place in most cases of language-use. Some notion of reference to objects and events in the world needs to be available somehow even if humans use language primarily for construction of inner thoughts of possible worlds, cognitive images, and the like. This is because the significance of these inner thoughts largely accrues from their connections with the world; use of language will not have survival value if the human mind created mostly fictions. It is in the real connections with the world—reference—that our plans and goals have a chance. So, what does it mean to have reference in this broad sense in a ‘thought-only’ picture of language?

1. Mind of Proto

In the familiar concept of reference adopted here, the notion of reference is tied to the idea of a vehicle which is typically a symbol in a language. For the referential function of language, there need to be vehicles of reference in the form of some abstract symbolic items: in the case of direct referential relation between a symbol and an object, individual symbols themselves have reference; in the other case, some words combine to achieve reference via thoughtful constructions. Even though a tiger searches for a definite shelter or a particular mate in the world, it is counterintuitive to say that the tiger ‘refers’ to the shelter or the mate because the tiger is not a symbol-manipulator.ⁱ

Incidentally, Chomsky appears to reject the idea of a linguistic vehicle for reference because Chomsky holds that words don’t refer, people do; just as legs don’t

walk, people do (Chomsky 2000). But then people need to use words to refer, just as people use legs to walk. If there are no legs, people can't walk. On similar grounds, there must be some device(s) for achieving reference in either case. So the issue is: what resources for reference are available to a silent creature that is endowed just with a thought-only language?

According to the perspective on reference just sketched, creatures can refer if their thoughts about the world have word-like constituents acting as vehicles of reference, even if the creature isn't talking. However, here we face a problem. On the one hand, our common understanding of referential devices consists of word(s) which are sound-meaning correlations; hence, it is unclear what it means to be endowed with a natural language which does not have a sound system (XXX 1). On the other hand, we cannot reject the thought-only idea of reference by fiat just because of our unfamiliarity with a necessarily soundless language; *prima facie*, there is no necessary connection between having sound and achieving reference.ⁱⁱ

To sidestep the problem, we may conduct a thought experiment by introducing artificial referential devices. Just as people are able to walk with artificial legs, we may think of a creature as endowed with artificial referential devices which satisfy the conditions of a thought-only language. As we saw, according to some authors, there was a period subsequent to the emergence of language where the linguistic system lacked any device for sound. Call this necessarily silent creature 'Proto'.

We may study Proto's linguistic capacities by borrowing some elements from another thought experiment proposed by the linguist Tanya Reinhardt (2006). Reinhardt develops Chomsky's narrative about the origin of language. According to Chomsky, we may imagine an individual pre-human hominid with the SM and CI systems, very similar to ours, already in place. Language emerged when the

generative device Merge was inserted in the hominid's brain. Reinhardt elaborates on the pre-linguistic resources available to the hominid. According to her, the hominid's pre-linguistic system contained the following:

- System of concepts similar to that of humans
- Sensorimotor system for perceiving and coding information in sounds
- An innate system of logic
- An abstract formal system
- Inventory of abstract symbols
- Connectives, functions, definitions necessary for language

It may be questioned whether such rich logical resources were available to the pre-linguistic hominid in the absence of Merge (XXX 2). However, the objection does not apply to Proto who was a linguistic creature. So, if we take away the sensorimotor system from the hominid and add Merge, we can ascribe the rest of Reinhardt's resources (RR) to Proto, the silent linguistic creature. Since Proto was endowed with an advanced CI system that may enter into thought-only computation, we are in a position to ask: what resources of reference did Proto have?

To get some grip on this vague question, let us focus on what philosophers have called 'Singular Thoughts': thoughts about individual objects. As noted, most organisms can perceive and deal with individual objects in the environment, but except for humans no other organism refers to these objects due to the absence of linguistic referential devices. Since Proto is endowed with language, Proto must have had singular thoughts as part of his inner thoughts. So, how are Proto's singular thoughts represented with Reinhardt-resources (RR)?

Suppose we have the thought 'Aha, ripe bananas', which may be represented in English with the usual Frege-quotes to highlight that it is an element of inner thought,

not an articulated thought. I don't know how else to write down an inner thought in a natural language. Given RR, it is likely that Proto has at least the resources of first-order logic. So, there is no reason why our ripe-banana thought cannot be captured in something like $(\exists x)(Bx \ \& \ Rx)$ which is a singular thought about a ripe banana.

Similarly, within the same logical resources, Proto may have adequate representation of more advanced thoughts such as 'Exactly the mate I want'. In Proto's RR symbolism, the English thought may be represented as $(\exists x)(Mx \ \& \ \forall y(My \rightarrow x=y) \ \& \ Wx)$ which, as Bertrand Russell (1905) told us, is equivalent to a definite singular thought. While we are at it, following suggestions of Richard Montague (Dowty, Wall and Peters 1980), we can endow Proto with more logical resources for Proto to entertain the thought $\lambda F[\lambda G\exists y[\forall x [Fx \leftrightarrow x = y] \ \& \ Gy]]$, where 'F' and 'G' are predicate-variables which take 'mate' and 'want' as values. This would be a genuine singular thought: 'My uniquely wanted mate'.

The preceding RR constructions ascribed to Proto suggest that a variety of familiar singular thoughts about individual objects and events are available to Proto within the resources of a thought-only language. In a thought-only conception of language, that is all the linguistic resources we have for achieving singular reference *in* language, the rest of the connections with the world are to be achieved with non-linguistic resources, such as perceptual information.

2. Strawson's Distinction

The striking thing about Proto's resources is that Proto can have sophisticated singular thoughts in mind purely in general terms because Proto's resources do not explicitly contain what are known as 'singular terms' in the philosophical literature. By 'Singular Terms' I will mean symbolic devices such as names like *Socrates*,

(singular) definite descriptions like as *the ancient Greek philosopher*, and (singular) demonstratives like *that philosopher*. For the purposes of this paper, I am setting aside all other devices in language, such as pronouns, indexicals etc., which help in identifying or mentioning individual objects and events. Given Proto's ability to represent inner singular thoughts with RR alone, the question arises as to whether singular terms are available in Proto's language.

With very much like RR in hand, Willard Quine (1960) once proposed that singular terms are not needed in a 'regimented' language; as Quine phrased it, singular terms may be 'eliminated' from a 'scientifically-adequate language.' Setting aside the issue of what kind of linguistic terms are needed in science, it is interesting to study Quine's method of eliminating singular terms in some artificial language. Cutting through a wide range of empirical and technical details, Quine's basic idea is to adopt (some version) of Russell's Theory of Definite Descriptions.

As already mentioned, Russell (1905) suggested that a singular definite description of the form *The F is G* may be recast in the notation of first-order logic as $(\exists x)(Fx \ \& \ \forall y(Fy \rightarrow x=y) \ \& \ Gx)$, meaning roughly that there is one and only one F and it is G. The original definite description, *The F*, no longer occurs as a unit in the Russellian reconstruction. According to Quine, definite descriptions as singular *terms* thus stand eliminated from the Russellian 'regimented' language.

Next, take a name such as *Socrates* and construct a predicate *is socrates* (or *socratises*) to yield *the object x such that x is socrates* (or, *x socratises*); notice *socrates* with small *s* shows that the original name is now treated as a general term. Now the resulting sentence with general terms will submit to Russell's analysis in obvious ways. With singular demonstratives, the task is straightforward: *This/that*

man is to be rewritten as *The man here/there*, which can then be subjected to Russell's analysis.

Are human languages Quine-regimented? As we saw, the key to Quine's strategy of elimination of singular terms is to paraphrase a singular definite description of the form *The F* into a first-order canonical form via Russell's Theory of Descriptions. Russell's Theory is best understood, if at all, as a paraphrase of quantified phrases of the form *One and only one F/ Exactly one F*. So the issue of elimination of singular terms from natural languages reduces to the validity of Russellian canonical forms for definite descriptions in natural languages. Russell's theory turns sentences with definite descriptions in the subject position into existentially quantified structures. For the purposes of this paper, I will set aside the existential part of Russell's construction (Strawson 1950), and restrict my attention to the quantified part (Strawson 1961).

Even after a century of discussion on Russell's ground-breaking paper on definite descriptions, controversies about Russell's theory continue. While many authors strongly support Russell's views on this matter (Neale 1990), others disagree. For example, I have argued from different directions that Russell's theory gives a wrong analysis of sentences with definite descriptions because definite descriptions in natural languages are not quantified structures. I have discussed this point in detail elsewhere (XXX 3, XXX 4).

For the restricted purposes of this paper, I do not wish to enter into the disputes about Russell's theory. Instead, following the work of Peter Strawson, I will simply propose an alternative perspective on definite descriptions to see if Strawson's insights may be accommodated in a thought-only first-order language. To that end, I will propose that most definite descriptions in natural languages are paradigmatic referential devices in a certain distinguishing sense.ⁱⁱⁱ They are not just a combination

of inner singular thought formed by the internal language and aided by perceptual systems for identifying referents in the world; that happens with any referential action anyway. Strawsonian definite descriptions are inevitably directed at conspecifics for sharing referents established on independent grounds. Strawson's basic point is that 'the act of supplying new resources is not the same act as the act of drawing on independently established resources' Strawson (1961). Supposing 'resources' to mean identifying referents in the world, I take that, according to Strawson, there are two different ways in which referents are identified by linguistic means: either a referent is introduced by a linguistic expression for new identification, or an expression draws upon a referent already identified by independent means. Although Strawson made the distinction primarily for definite descriptions, we will see that the distinction applies to other singular terms as well.

Strawson's distinction is different from Donnellan's distinction between uses of identifying expressions (Donnellan 1966). Donnellan distinguished between attributive and referential uses of definite descriptions: in an attributive use, some individual, whoever she is, is pointed out in a general way; in a referential use, a particular individual is mentioned. It can be argued that Donnellan's distinction, including referential uses, possibly applies to most quantificational structures in a language, such as *a man* and *every woman*; they also apply to definite descriptions, perhaps they apply even to some names and some demonstratives with a certain twist (XXX 5). Most importantly, nothing prevents Donnellan's distinction, including referential uses, to apply to singular thoughts in a thought-only language insofar as a singular thought mentions an individual in a general way or picks out particular individuals via non-linguistic resources. In contrast, Strawson's idea of identifying uses applies only to definite descriptions and other singular terms as listed above, but

they do not apply to quantified structures. Moreover, as we will see, Strawson's idea does not apply to thought-only languages.

Strawson's observation suggests that, while quantified structures supply new resources for identification, definite descriptions are 'name-like' in that they draw on independently established resources. I will assume that, according to this distinction, a speaker using a definite description assumes that, when directed by the use of the description, the hearer can locate the referent mentioned by the definite description independently of the utterance by the speaker. In that sense, Strawson's idea applies to a speaker-hearer context and, for that reason, it is unavailable in a thought-only language. We develop the idea as we proceed.

Let me try to understand Strawson's distinction with straightforward linguistic intuitions. Let us suppose a school-teacher asking in a history class (Scenario One): 'how many kings of France died at the guillotine?' Supposing just one king of France died at the guillotine, an appropriate and correct response would be, 'one.' If the teacher pursues, 'isn't that more than one?', an appropriate answer would be, 'no, exactly (or just or only) one.' The point is, the question requested a number, possibly a unique one, and that request is not fulfilled by uttering *the king of France*. Suppose now the teacher asks (Scenario Two): 'which one of them ruled from Versailles?' Now an appropriate and correct answer would be, *the king of France*. In this case, it would be totally inappropriate to respond with *one and only one king of France*.

So the basic distinction between quantified phrases like *one and only one king of France* and definite descriptions like *the king of France* is that, while the former responds to a 'how many' question, the latter is a response to 'which one' questions. This difference in the functions of the concerned expressions leads to Strawson's distinction between introducing resources and drawing upon independently

established resources. Thus, in scenario one, the teacher was testing if the children can introduce the reference properly; in scenario two, the teacher was testing if the children can draw on their established resources. The quantificational resources of first-order logic, as covered in RR, may be used to construct singular thoughts to introduce new resources, but they do not offer the machinery to draw on independently established resources.

The contrast between quantified expressions and definite descriptions is strikingly illustrated in the so-called anaphoric uses of definite descriptions (Heim 1982). The quantified phrase *A man* in the sentence *A man came to see me* establishes a new resource, arrival of a man. We may then use the established resource to say, *The man was drunk* mentioning the man already identified. This form of dependent use is not restricted to definite descriptions in the subject position. The request *Please give me the book* is used correctly when the hearer is able to identify a book from independent resources; otherwise, the hearer is likely to ask, ‘which one?’

3. The Sound of Definiteness

The example of definite anaphora also suggests that Strawson’s distinction cannot be formally understood in terms of the grammatical category of determiners. Both *a* and *the*, and a host of other linguistic items are classified as determiners in grammar, but, in terms of Strawson’s distinction, *a* is a quantifier introducing new resources while *the* draws upon resources already introduced. To highlight this distinction, let us call general determiner structures ‘det-structures’, and structures with definite descriptions ‘def-structures’. As we will now see, all singular terms as specified above may be viewed as expressions with def-structures, answering to Strawson’s idea of a referential device that draws on already established resources. Strawson’s distinction

thus delinks the natural use of definite descriptions from Russell's Theory and opens another way of looking at the category of singular terms.^{iv} The crux of the distinction we saw lies in the very different roles of quantificational structures and def-structures.^v

Definite descriptions of course are def-structures by definition. Demonstratives like *that* are also def-structures in a similar way. Like definite descriptions, demonstratives also have the form of a determiner followed by a common noun, *that F*, and they are typically used when the hearer can pick out a referent independently, usually aided by a pointing gesture. In that sense, demonstratives indicate an object or event independently identified. As noted, both *The F* and *That F* share this general referential function of drawing on established referents. However, this generality does not preclude subtle differences in meaning between *the* and *that*. For example, we can say, *Give me that book, that book and that book*, but we cannot say, **Give me the book, the book and the book*; further, although we can say *give me that*, we cannot say **give me the*.^{vi} I return to the issue of meaning of these expressions below.

Interestingly, it appears that proper names may also be viewed as Def-structures. The most immediate case of proper names with a def-structure are definite descriptions which have 'grown' into names, as Strawson put it: *The White House*, *The Holy Book*. Even regular names can form a def-structure with *the* or *that*: *The Noam Chomsky*. The phenomenon occurs across languages. In Bangla, we can say, *Ram-ta elo-na* (Ram-the/that come-not, That Ram didn't come/show up), where *Ram* is a name and *-ta* is a postpositional definite item. Such examples suggest that even names without overt def-structures may be viewed as subliminal definite items with an overt null def component, insofar as their noted referential function is concerned.

Under this conception of referential function, we may view all names as def-structures.

We may thus conjecture that, at the output of grammar which is technically known as Logical Form (LF), singular terms are just (subliminal) Def-structures. In pragmatics, they fan out as overt definite descriptions, proper names and demonstratives. They all serve the same primary function of drawing on independently established resources, but they individually cover different aspect of the spectrum of resources to enable the speaker to draw attention of the hearer on subtle variations in segments of the spectrum. A detailed study of the phenomenon is beyond the scope of this paper.

As an aside we may note that, given the suggested Strawsonian perspective on singular terms, we may view the function of drawing on independent resources as the ‘meaning’ of definite descriptions, where meaning is understood as the condition of application of an expression. However, the specific condition of application of singular terms under discussion here should not be confused with the conception of meaning as general instructions for use, as proposed in Strawson (1950). That earlier conception of meaning perhaps applies to any expression of language such as *book*, *one and only one king of France*, and the like; there is nothing specific about singular terms in the earlier conception. The proposed condition of application under discussion here is restricted to typical uses of singular terms.

Incidentally, the conception of meaning ascribed to typical uses of singular terms via Strawson’s distinction also differs from recent challenges to the Fregean conception of meaning of some of the singular terms. Cutting through many details and much controversy, many authors claim that ordinary proper names do not have Fregean sense at all; if anything, they only have reference such that the referent, if

any, of a proper name directly contributes to the truth-condition of a sentence containing it without routing the expression via Fregean sense (Kripke 1980, Recanati 1993); such a view is sometimes called ‘Direct Reference’. Although complex demonstratives like *that F* do contain a Fregean component *F*, David Kaplan (1989) suggests that in a typical use of a demonstrative associated with a demonstration, the common noun in a complex demonstrative may be ‘whispered aside’. So, demonstratives also fall under direct reference. Since it is commonly believed that definite descriptions like *the F* contain a descriptive ‘blue-print’ for achieving reference (Almog 1980), there is supposed to be a sharp distinction between the Fregean character of definite descriptions, and directly referential character of proper names and demonstratives. However, for our purposes, the important feature of the Fregean and non-Fregean views is that they are both compatible with a thought-only conception of language. In that sense, they are just different views of what constitutes the content of Proto’s thought.

Following Strawson’s idea of drawing on independent resources, the category of def-structures gives a very different perspective on singular terms. For instance, once the use of definite descriptions is delinked from Russell’s quantificational picture, it is questionable whether definite descriptions may be included in the Fregean class at all. More specifically, the use of *the* does not signal some quantity bearing the sense of the expression, it is something of a pointer to an existing resource. No doubt, the pointing is assisted by the rest of the phrase consisting of *F* to narrow down the general direction of search, as with occurrences of *F* in complex demonstratives. But then, more or less on par with demonstratives, the *F*-part in a definite description as well may be ‘whispered aside’ for an ‘indexical’ phrase such as *the man over there*. So, there is at best a difference in the grade of ‘blue-print’ between standard definite

descriptions and complex demonstratives. From this perspective, definite descriptions, demonstratives and proper names form a graded distribution within the spectrum of def-structures.

The Strawsonian perspective on singular terms under discussion here raises doubts as to whether Proto's singular thoughts contained them at all. For this paper, the most compelling aspect of the phenomenon of singular terms is that they are directed at hearers. So, they are a part of the conversation between conspecifics. Hence they require the sensorimotor apparatus. Proper names are typically ascribed to objects we already identify; therefore they do not make any additional contribution to the content of our singular thoughts. As David Kaplan (1973) observed there is really no need of proper names in a language except for calling kids to dinner. Demonstratives are typically used to indicate objects we already see; so we use them for drawing attention of the hearer to something we assume to be visible to the hearer; hence, they are typically accompanied by a pointing gesture.^{vii} As a result, in many cases, the common noun maybe 'whispered aside' or not used at all, as noted (Kaplan 1989).

Definite descriptions appear to occupy the other end of the spectrum while thinning out towards demonstratives. As emphasized, definite descriptions are used when the speaker is relatively certain that the hearer can pick out the referents from the indicated general area from his own perceptual, contextual and other resources of knowledge (Strawson 1961). In sum, singular terms are used to trigger some conversation between conspecifics in terms of resources already shared. Singular terms are needed because there are conspecifics around. That is why singular terms need to be sounded. Insofar as singular terms are concerned, the sound-part of language is essential; it is not 'ancillary'.

The preceding analysis explains why Proto, with a thought-only language, did not possess singular terms in his linguistic armory simply because she did not need them as there were no language-speaking conspecifics around. When we use a definite description, demonstrative or a name to direct the attention of the hearer, we already have certain objects in our minds to which we direct attention of others. Since Proto has the Reinhart-resources to frame her singular thoughts, there is no additional need for her to be endowed with singular terms. Proto plans her moves in the world in silence.

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Notes

ⁱ Therefore, it is unclear which non-human communication systems Chomsky has in mind in claiming that non-human systems may be endowed with Chomsky's idea of reference.

ⁱⁱ Moro (2016, Chapter 8) makes the interesting but not entirely surprising claim that a 'sound envelope' accompanies the process of thinking even when someone is reading something mentally, in silence. Once words are learned as units of sound-meaning correlations, inner images of sound are likely to accompany words even in writing, much like the reading of a musical score.

ⁱⁱⁱ Arguably, 'Russellian' descriptions, such as *the least prime*, *the present king of France* etc. appear to escape Strawson's view of descriptions. In my view, even these can be accommodated within the Strawsonian scheme. A discussion of this issue is beyond the scope of this paper.

^{iv} I am not suggesting that *all* uses of concerned singular terms *only* draw on established resources. Once these expressions enter natural languages, it is quite possible that there are cases where a use of a singular term may also be viewed in terms of Reinhardt resources (King 1999). So the Strawsonian claim is limited to most or typical or primary uses of singular terms. A detailed discussion of this empirical issue is beyond the scope of this paper.

^v I am not suggesting of course that the distinction applies to all determiners as classified by linguists. Thus, I am setting aside the issue of whether all determiners under the det-def distinction are quantifiers. Our attention is restricted to the class of singular terms, as noted.

^{vi} Interestingly, on par with *give me that*, we can also say, *give me all*, *give me one*, *give me many* etc. However, the expression *give me that* typically ensues in response

to a ‘which one’ question, while the others are answers to ‘how many’ questions. So the commonality of use does not defeat Strawson’s distinction. A detailed discussion of these issues is beyond the scope of this paper.

^{vii} There is some evidence (Povinelli 2000) that such pointing gestures towards objects in the visual field are apparently unique to humans.