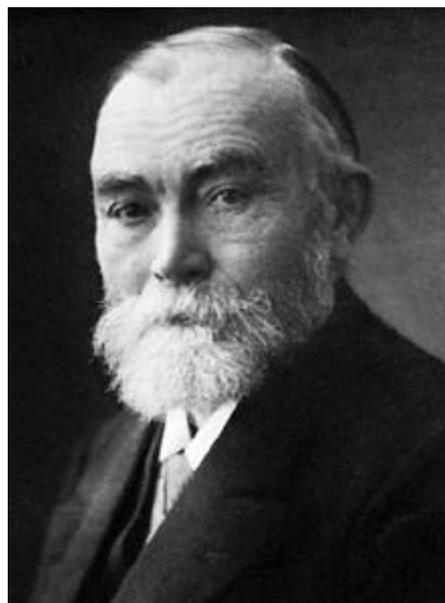


Classic Text 17 - Philosophy of Language: Truth and Reference

The Philosophy of Language in the West has its origins in antiquity beginning with Socrates, Plato, Aristotle and the Stoics. (Blackburn, 2005) However in this commentary we shall be concerned with its development in the Analytic Tradition beginning with the German Philosopher Gottlob Frege in the mid-19th Century to the present. In its modern form the Philosophy of Language is concerned with four broad areas of study: meaning, usage, and the relationship between language and mind on the one hand and language and reality on the other hand. We shall not be concerned here with developments in Continental Philosophy of Language as these take quite a different turn.



Friedrich Ludwig Gottlob Frege (1848 - 1925) Philosopher, Mathematician and Cofounder of Modern Logic

The teaching of the Philosophy of Language is often postponed to fairly late in the curriculum at university, usually because a certain competence in Symbolic Logic is assumed. If you have been following the Critical Reasoning series of topics you should be well prepared to interpret the logical expressions and follow all the arguments in detail. If not, you should still be able to follow most of them from the context anyway.

Language is at the same time so familiar to us that we hardly give it a thought in our day to day dealings, however when we try to examine it systematically, often through the works of others, we encounter shifting meanings, blind alleyways and incredulous notions. Some blame this on the obvious difficulty of having to use language while at the same time explaining it. However this is not an insurmountable problem for Philosophy. After all, Logic is explained while using it to reason. Similarly, Human Psychology is studied by the minds of students and academics, without ambiguity.

Two Australian Philosophers, Michael Devitt and Kim Sterelny (1999), have accomplished the colossal task of picking through centuries of theoretical debris and weaving together a text that is both clear and comprehensible as well as, we believe, philosophically sound. Their book *Language and Reality: An Introduction to the Philosophy of Language* (2nd Edition) therefore represents a modern "Classic Text" to which we shall refer in this and subsequent topics concerning the Philosophy of Language. If you cannot buy a copy or borrow one from your local library, the first two chapters: the introduction and "Truth and Reference" are available free for download [here](#). (Under South Africa copyright law individual chapters may be reproduced for educational purposes.)

The Study of Language

Language is such an important and interesting phenomenon that it is studied by various disciplines from the formal languages of Computer Science and Logic to Anthropology and Ethnography, however it is Linguistics (the "Science of Language") that is concerned with at least three main sub-disciplines: *phonology*, sounds and their production; *grammatical structure* or language form; and *semantics*, meaning. Philosophy of Language is chiefly concerned with the latter, and with syntax to a lesser extent. However the nature of the questions philosophers of language ask differ from those

of the linguist in much the same way that questions of the Philosophy of Mind differ from those of Psychology.

The Problem of Language

In order to put some distance between ourselves and the central problem of language, Devitt & Sterelny ask us to imagine that we are aliens visiting Earth for the first time. Apart from anatomy, physiology, genetics and so on, the phenomenon of human language would surely interest us. A comprehensive catalog of the sounds and inscriptions that humans make and under what circumstances would not exhaust the problem. We would also want to know about the properties of these sounds and inscriptions that enable them to play a role in human affairs. Suppose we call such properties “meanings”, the task then is to discover what these meanings are and what makes it the case for something to have one (or more than one). This is the task of semantics or the theory of meaning.

A related task, if we were also interested in Human Psychology, would be to ask in what ways meanings are related to minds and what are the properties of minds that make it possible to have them. Not only that, we would want to know what it is about humans that allow them to competently produce and react to certain sounds, inscriptions, gestures and so on in a way that conveys meaning *i.e.* linguistic competence. Furthermore, we would want to know the function of such competence - why is it that human life and culture is so bound up with language - what is it for?

According to Devitt & Sterelny, the folk saying, “language expresses thought” captures this central role: “...human language is *a system for expressing or communicating thought.*” And while many thoughts are informational, in the sense that they encode information about the social or physical environment, others are not purely informational if we consider that: “language is used to greet, question, command, joke, offend, abuse, intimidate, and so on.” (p. 5)

So besides conveying information (or misinformation), some of the thoughts that language express are bound up with behaviour to the extent that knowing what others are thinking is a good indicator of *what they are likely to do*. If for example, someone tells us that she believes that it is going to rain, we would expect her to take an umbrella. On the other hand, if we believe she is reliable about such matters, we would also be able to infer such information about the world (*i.e.* that it is about to rain) without having to experience it for ourselves. The fact that we can rely on other people’s experience vicariously, through the medium of language and its cultural accoutrements is arguably the greatest evolutionary leap forward that humanity has ever made. It is no exaggeration to say that language permits us to comprehend the thoughts of others, (if they have the means to express them and we the means to understand them.)

“In sum,” according to Devitt & Sterelny, “the central role of language is to express thoughts. Derivatively, it has at least these two roles: explaining behaviour and informing us about the world. Meanings are the properties that enable it to play these roles.” (p. 5)

Language Use Among non-Human Animals

There is no doubt that non-human animals use various forms of communication to convey information, though whether and to what degree these resemble human language remains controversial. Consider the following three cases in point.

Using a model/rival technique of training where Alex was able to observe Pepperberg and an assistant interacting, sometimes changing roles, they were able to facilitate a process of two-way communication with Alex, who sometimes assumed the role of one of the assistants. Not only did Alex practice words when alone at times, “Pepperberg reported that during times when she and an assistant were having a conversation and made mistakes, Alex would correct them.” (Wise, 2002 p. 93, 94-96)

By 1999 Pepperberg claimed that Alex could “identify 50 different objects and recognize quantities up to six; that he could distinguish seven colors and five shapes, and understand the concepts of ‘bigger’, ‘smaller’, ‘same’, and ‘different’”, and that he was learning ‘over’ and ‘under’.” (Smith, 1999) At the time of his death, Alex had a vocabulary of over 100 words which he appeared to understand, giving contextually correct answers approximately 80% of the time. Moreover Pepperberg claimed that Alex understood the concept of ‘zero’, using the word ‘none’ when asked to describe the difference between two identical objects. (Carey, 2007; Wise 2002, p. 104; Wikipedia: Alex (parrot))

Rather than reading a lengthy description of Alex’s sessions, you may wish to view them for yourself. Entering “Alex the parrot video” into your preferred search engine will return links to multiple online postings such as those on YouTube. Remember that the philosophical point of such a diversion is to inform some of our notions about meanings and their role in natural language. Did Alex understand the language he was using or was he simply highly trained to repeat utterances under specific conditions to extract a reward from his instructors? Was his “language acquisition” any different from a human infant, and if so in what respects? Either way, what are the philosophical lessons, if any?

Washoe the Chimpanzee was the first of several non-human primates to be taught American Sign Language (ASL). Previous attempts to teach vocal language to chimps had failed because of differences in the anatomy of the vocal tract between chimps and humans; therefore the choice of a signed language was the next plausible alternative. Washoe was born in West Africa and captured by the US Air Force in 1965 for research purposes. In 1967 however, Allen and Beatrix Gardner undertook to raise Washoe in an environment as close as possible to a human child. (Wikipedia: Washoe (chimpanzee))



Washoe the Chimpanzee (1965 - 2007) The First non-Human to Use American Sign Language

The details of Washoe’s education make for interesting reading, however what is of interest for the philosophy of language is that she mastered the gestures for approximately 350 words which she used correctly and in context and in turn taught a good many of them to her adopted son Loulis. To count as a learned sign Washoe had to use it spontaneously for 14 consecutive days. In addition, such signs were subject to a double-blind vocabulary test, which demonstrated “that the chimpanzee subjects could communicate information under conditions in which the only source of information available to a human observer was the signing of the chimpanzee;” 2) “that

independent observers agreed with each other;” and 3) “that the chimpanzees used the signs to refer to natural language categories - that the sign DOG could refer to any dog, FLOWER to any flower, SHOE to any shoe.” (Gardner *et al.*, 1989; Fouts *et al.*, 1989; Wikipedia: Washoe (chimpanzee))

Besides demonstrating self-awareness by being able to identify herself in a mirror, what is both linguistically and morally thought-provoking is that Washoe was able to use ASL to express psychological states including empathy. At one time, one of Washoe’s caretakers who had miscarried missed work for many weeks. Roger Fouts recounts that:

People who should be there for her and aren’t are often given the cold shoulder - her way of informing them that she's miffed at them. Washoe greeted Kat [the caretaker] in just this way when she finally returned to work with the chimps. Kat made her apologies to Washoe, then decided to tell her the truth, signing “MY BABY DIED”. Washoe stared at her, then looked down. She finally peered into Kat's eyes again and carefully signed “CRY”, touching her cheek and drawing her finger down the path a tear would make on a human (Chimpanzees don’t shed tears). Kat later remarked that one sign told her more about Washoe and her mental capabilities than all her longer, grammatically perfect sentences. (Donovan & Anderson, 2006 p. 190)

Washoe herself had lost two infants shortly after their birth, one due to a congenital heart defect, another following a Staphylococcal infection. (Wikipedia: Washoe (chimpanzee)) That Washoe was in fact expressing empathy over and beyond sympathy appears highly credible and not the least anthropomorphic.

Impressive as these non-human animals’ “linguistic” abilities are we should recall that none, as far as we know, has ever spontaneously developed them in the wild. In the case of Alex and Washoe and others, they were raised in a human environment and their training was laborious, intensive and spanned decades.

Characteristics of Human Language

Without committing themselves either way to the any of the philosophically interesting side issues concerning the non-human use of “language” Devitt & Sterelny suggest that “... we make some progress with identifying our problem by setting out some of the salient features that make human natural languages and their meanings so special.” (p. 6) Consider that human language is:

a. Stimulus independent

There is no generalizable stimulus-response pattern to the use of human language. With very few exceptions, such as slamming one’s fingers in a car door, there is no telling how different people will respond in language to a given situation. In the case of birds and non-human primates, for example, each species has a fairly small repertoire of **fixed action patterns** (FAPs) associated with a handful of external sensory systems that elicits a “hard-wired” or instinctive functional response. Vervet monkeys, for example have three distinct alarm calls for snakes, leopards and eagles, so arguably there is a semantic element to such calls. (Wikipedia: Alarm signal) At any rate a given threat stimulus is always paired with particular response in an inflexible and predictable way.

Foraging worker cast honey bees on the other hand can communicate a potentially unlimited number of signals by varying aspects of their dance such as length, orientation and the pheromones they release. So although their communication may appear to be more flexible compared with the FAPs of other species, it is wholly determinate and predictable in the way that human language is not. If you know the distance, orientation and relative abundance of a food source you can, in principle, predict the associated dance pattern in detail. Compare this to a human emerging from a fine restaurant; even if there was a fixed menu, there is no telling what she may say about the food or anything else, if anything. Compared to the FAPs of non-human animals we are linguistically stimulus independent, which is not to say that we may not be disposed to say certain things, rather than others, in similar situations.

b. Abstract

Language has the power to abstract away from a situation, homing in on perhaps just one detail, in a way that other representational forms such as photographs or realistic sketches cannot do. The authors example of “Orson weighs 130kg” tells you only Orson’s mass and nothing else, whereas a photograph or realistic sketch of Orson would tell you quite a lot besides. A honeybees’ dance by contrast “cannot be silent on the distance of the food source while revealing its direction.” (p. 7) Vervet monkeys alarm calls, recall, have evolved to be quite specific, signalling only the nature of the threat: snake, leopard or eagle. It is not surprising therefore that some have been hasty to regard each call as “symbolic” of its threat species.

c. Arbitrary

Linguistic symbols, with notable exceptions, have no intrinsic relationship between their sounds or the appearance of their inscriptions and the objects to which they refer. There is for example, nothing intrinsically “housy” about the word ‘house’ or indeed the sound /'haʊs/. Of course words have etymologies that explain how they came to have the associated meanings that they do but these are historical accidents, matters could have been different.

The extract from Lewis Carrol’s *Through the Looking Glass* bears reproduction because some philosophers of language refer to a straw man (or rather egg-man) version of the theory of meaning as the “Humpty Dumpty Theory of Meaning”, that ceases upon this arbitrariness:

“... and that shows that there are three hundred and sixty-four days when you might get un-birthday presents —“

“Certainly,” said Alice.

“And only one for birthday presents, you know. There’s glory for you!”



“I don’t know what you mean by ‘glory,’” Alice said.

Humpty Dumpty smiled contemptuously. “Of course you don’t — till I tell you. I meant ‘there’s a nice knock-down argument for you!’”

“But ‘glory’ doesn’t mean ‘a nice knock-down argument,’” Alice objected.

“When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean — neither more nor less.”

“The question is,” said Alice, “whether you can make words mean so many different things.”

“The question is,” said Humpty Dumpty, “which is to be master — that’s all.”

Charles Dodgson writing as Lewis Carroll (1871, Ch. VI)

The lesson here is that Humpty Dumpty is correct to emphasise the arbitrariness of language but wrong to suppose that question of meaning it is entirely subjective. Devitt & Sterelny meanwhile address Alice’s point in their Ch. 7.4.

d. Learned

Natural (and artificial) languages have to be learned, while communication systems that consist of a few FAPs such as the waggle dance of worker bees or the alarm calls of Vervet monkeys are, as far as we know, essentially innate. And while some linguists, following Noam Chomsky, (1965) have argued for the existence of a hypothetical Language Acquisition Device (LAD) to account for children’s innate predisposition to acquire language, it is precisely the function of the purported neurologically hard-wired device to *learn* language.

e. Medium independent

Natural languages can be communicated in an astonishing variety of ways: speech, song, gesture, writing, braille, whistles, flag signals, electronic code, facial muscle twitches and EEG controlled mouse pointers and so on. Non-human communication systems are always tied to the same mode and medium of expression. If, such as in the case of honey bees, where there is more than one medium of communication, such as pheromones, scent trails *and* the waggle dance, these media are not interchangeable or expressible by other means.

f. Systematic

Instead of learning a unique expression (verbal, written or otherwise) for every meaning, language users learn discreet, repeatable elements such as words, together with methods or internalised rules by which they may be combined to create novel meanings. Alex the parrot, for example did not have a word for ‘cake’ when he first tasted some, instead he combined the words ‘bread’ and ‘sweet’ which he had learned to form ‘sweet bread’ to mean ‘cake’. Non-linguistic communication systems such as the honey bee waggle dance do have a degree of systematicity but the range of possible meanings so generated is extremely limited.

g. Power (Productivity)

The power of language to do semantic work is prodigious. We may talk meaningfully about anything from sub-atomic particles to multiple universes and anything in between, past, present and future, including the very nature of time. The power of non-linguistic communication by contrast is constrained by just a few functional states of each channel.

Linguistic Symbols

We have touched on the idea of a sign or symbol only obliquely, however linguistic symbols deserve special mention because they are both possessors and vehicles of meaning. Indeed our wide-ranging mastery of symbols is the one characteristic that sets us apart from other creatures; so much so that the biological anthropologist Terrance Deacon (1997) refers to us as *The Symbolic Species* in his book of the same name.

According to Devitt & Sterelny, of all the myriad roles that symbols play in the context of language, the Philosophy of Language is concerned with two related main problems:

- that of explaining meaning, *i.e.* “to describe and explain the properties of symbols in virtue of which they play the central role they do in our lives;” and
- linguistic competence, *i.e.* “to describe and explain... the features of people’s minds in virtue of which they can use and understand symbols and the symbol system we call language.” (p. 8 - 9)

Doing so requires that we take a meta-theoretic stance toward our subject. Although Devitt & Sterelny devote some space to making their stance explicit (p. 9 - 11) we have already, in most of the study units so far, been labouring under the same naturalistic and physicalistic assumptions, including placing a premium on *a posteriori* empirical evidence, parsimony and healthy dose scepticism with regard to folk theories, methodologies and opinions. That much remains the same here.

Rather than pick through all of the items on “The Menu” beginning on p. 11, we shall head directly to those items or theories of language that we believe to be correct or close enough to being correct that they can be improved upon in subsequent theories, the first of these being the “representational” theory of meaning.

The Representational Theory of Meaning

Hitherto we (and the authors) have been using the term ‘meaning’ and its cognates rather loosely. Consider the “meanings” of the following sentences:

Those clouds mean rain.

The cat is on the mat.

He is not too bright but he means well.

She always meant to mend that fence.

'Squared' means you multiply the number by itself.

Mandela lived a very meaningful life.

Crossly, arms akimbo: "And what, pray, is the meaning of this?"

Fondly: "Ah! 'Stephanie' that name has a great deal of meaning for me."

Each of the above uses 'meaning' in a somewhat different sense. Initially however, we shall be concerned only with the meanings of literal, indicative sentences - those such as the second one above that are used to state a matter of fact. Although English has cast off much of its inflection it has retained its various other moods: interrogative, imperative, and subjunctive, which we will come to later.

According to the representational theory of meaning, an indicative sentence represents some situation that would make it true and the core meaning of such a sentence is its **truth condition**. Consider the following very simple sentence involving only a subject and a one-placed predicate:

Snow is white.

Whether uttered, written or signed it represents something about the world and the core meaning of this something (or representation) is the condition that would make it true. In this case 'Snow is white', is true if and only if snow really is white and false otherwise. If someone were to discover some snow that is of another colour that would render our sentence false, but not meaningless. The core meaning of the sentence 'Snow is white' lies in the conditions that would make it true and by extension those that would make it false.

Some serious (and not so serious) philosophers have criticized this conception of meaning as being redundant or circular. According to their reading of the representational theory of meaning 'Snow is white' simply means *snow is white*. In a trivial sense of course it does; however this is a red herring: the reason that it achieves such a core meaning is because we know the truth conditions that would have to obtain for it to be true or otherwise false.

Sentences themselves are composed of certain elements, be they words, sign language gestures or inscriptions that stand for words, all of which are syntactically structured. If, as Devitt & Sterelny (p. 21) point out, we hold the structure constant and vary the words, the truth conditions vary.

Consider:

Socrates is human

Descartes is dead

Gaga is famous.

Similarly, if we hold the words constant but vary the structure; say by changing the word order, the truth conditions again vary. Consider:

A cat is on a mat

A mat is on a cat.

Of course these are very straightforward examples; however there is no shortage of examples in which the syntactic structure is ambiguous:

He fed her cat food

Look at the dog with one eye

I saw a man on a hill with a telescope.

In the case of the last sentence there are five possible meanings. (Can you identify them?) Obviously, there is something about words that affect the truth conditions of sentences that contain them and this something according to the representational theory is the **referent**. According to Devitt & Sterelny, "Just as the representational property of a sentence is its property of having a certain truth condition, the representational property of a word is having a certain referent. In sum, the truth condition of a sentence depends on its syntactic structure and the referents of its words." (p 22)

Reference, in the case of the simple sentences above, operates via two processes: **designation** - the picking out of subjects or persons and **application** - the predication of affirmation of something about the subject. Thus "Gaga is famous" has as its core meaning, its truth condition, such that it is true if and only if Gaga is indeed famous, which in turn is given by the fact that:

- a. There exists at least one entity designated by 'Gaga', and
- b. 'is famous' applies to (can be predicated of) that entity.

Consider another example involving two subjects and a two-placed predicate:

A cat is on a mat.

Again, whether uttered, written or signed it represents something about the world and the core meaning of this representation is (or are) the condition(s) that would make it true. In this case if, and only if, there were somewhere in the universe both a cat and a mat, such that the cat is on the mat, then this sentence would be true. Similarly, reference here operates via the same process of designation and application such that:

- a. There exists at least one entity designated as 'a cat'
- b. There exists at least one entity designated as 'a mat'
- c. '... is on...' applies to (can be predicated of) the entity in 'a' and the entity in 'b', respectively.

Of course the use of the word 'respectively' is a bit pedantic because English speakers know that '... is on...' is not a symmetrical relationship and are unlikely to confuse the above sentence with the one such that the mat is on the cat. Even so the wording is a little cumbersome even when trying to spell out the meaning and reference of such a little sentence. However anyone with even a smattering of Logic must suspect that this state of affairs can be improved.

The Logic of Some Truth Conditional Sentence Meanings

In the series of study units on logic we have already become familiar with ways to translate subject-predicate sentences, universally and existentially quantified statements, logical relations as well as counting and the use of the definite article. Such translations have the double virtue of being almost free from ambiguity, with notable exceptions, as well as having known truth conditions. Thus 'a cat is on a mat' becomes:

$$(\exists x)(\exists y)[Cx \cdot My \cdot Ocm]$$

such that c is a cat, m is a mat and Oxy is the relation 'x is on y', with the core meaning of the translated sentence being its truth condition together with its referents as above.

Logical translation is also a way of disambiguating sentences such as:

Every man loves some woman.

Do we mean that each man loves some or other women? In which case:

$$(\forall x)[Mx \supset (\exists y)(Wy \cdot Lxy)]$$

such that Mx : x is a man; Wy : y is a woman and Lxy : x loves y . Or do we mean that every man loves one special woman? Let's call 'the goddess', in which case:

$$(\exists y)[Wy \cdot (\forall x)(Mx \supset Lxy)]$$

The difference between these two formulae lies in the scope of their quantifiers. In the first one, the existential quantifier is nested within the scope of the universal quantifier; in the second, it is the other way round. The two formulae have quite different truth conditions and hence different meanings.

The meanings of sentences in other moods can be treated in a similar truth functional manner. The question: 'Is a cat on a mat?' can be treated as the indicative sentence:

A cat is on a mat

for which we want to know the truth value. Similarly the imperative: 'Put a cat on a mat!' can be treated as the same indicative sentence with the force of a command:

Make it true that a cat is on a mat!

Subjunctive sentences such as:

If there were a cat on a mat it would shed (hair)

are a little more complex and require a foray into modal logic (the logic of necessity and possibility *inter alia*), which we have not yet attempted. We shall therefore discuss them in a separate study unit. It is worth noting here however, that there are some scientific terms like 'soluble' that are inherently subjunctive, even in the indicative. When for example, we say that chemical X is soluble in water, we do not mean that it is at present in aqueous solution, only that *if it were to be* placed in water, it would dissolve.

Beginning in the 1950's with Noam Chomsky's "transformational-generative grammar", the task of transforming all of natural language sentences into logical formulae, amenable to truth conditional semantics is incomplete but ongoing. (p. 29) Chomsky however is clear that "theories of transformational generative grammar are [not] intended as a model for the processes through which the human mind constructs and understands sentences. [Instead] a generative grammar models only the knowledge that underlies the human ability to speak and understand." (Wikipedia: Transformational grammar)

Contexts in Which Reference is Necessary but not Sufficient to Exhaust Meaning

Devitt & Sterelny use the terms 'coarse-grained' and 'fine-grained' to represent two levels of meaning. On the one hand the words 'snow' and 'Benjamin Franklin' derive their "coarse-grained" meaning in their ability to refer to snow and Benjamin Franklin, respectively. On the other hand consider the following two individuals:

The inventor of bifocals

The first Postmaster General of the United States

On the coarse-grained level of meaning, both of these descriptions designate the same individual, Benjamin Franklin, in the way that they refer to the same individual. However consider the following pair of identity statements:

- 1.) The inventor of bifocals is the inventor of bifocals
- 2.) The inventor of bifocals is Benjamin Franklin.

Clearly these sentences *do* differ in their meaning in a non-trivial way that goes beyond their role in refining to and hence designating the same individual. Some have argued that this difference is an epistemic one. 1.) is known *a priori* - *i.e.* independently of experience, while 2.) can only be known *a posteriori* - *i.e.* derived from experience. Certainly this is the case in Frege's classic example of:

- 1.) Hesperus is Hesperus
- 2.) Hesperus is Phosphorus

The ancient Greeks used the name 'Hesperus' to refer to the first star to rise in the evening and 'Phosphorus' to refer to the last star visible over the horizon in the morning. Today we know these both to be the same celestial body - not a star but the planet Venus. Another epistemic difference between the above pairs of sentences is that the first of each pair are uninformative. They add no knowledge to the world. They are merely instances of the law of identity such that $(\forall x)(x = x)$. The second of each pair of sentences are however are informative. They tell us something interesting about the objects to which they refer. So clearly the first and second of each pair of sentences don't mean the same thing as the other.

According to Devitt & Sterelny however, the assumption that an epistemic difference reflects a semantic difference is based on the following underlying assumptions:

If (1) and (2) meant the same then the competent speaker would (tacitly) know that they meant the same.

If she knew this then (1) and (2) would be equally informative to her.

Since (1) and (2) are not equally informative, it follows that they do not mean the same (p. 31)

As the authors point out, the first supposition relies on the “Cartesian assumption” that one’s mind is always transparent to its contents, so that if one is competent in using an expression one would automatically have “privileged access” to the particulars concerning its meaning. Certainly, this is a widely held belief but it is not generally true. When for example, a child learns to use the name ‘Einstein’ correctly to identify the famous scientist in a portrait in her school library she has no introspective grasp of its many meanings. To do so she would have to acquire a great deal of *empirical* knowledge to which she has no privileged mental access.

Even so, most of us would continue to insist that the pairs of sentences above do have different meanings. The difference, the authors suggest, issues in the role that meanings have in the explanation and prediction of behaviour. Suppose for example that Josephus’ eyesight was poor and that he was constantly having to switch between his reading glasses and his long vision spectacles. Suppose further, that he had heard about the recent invention of bifocals by a neighbour down the road but that he did not know his identity. The difference in the meanings of ‘The inventor of bifocals’ and ‘The first Postmaster General of the United States’ would therefore issue in a behavioural disposition to wander down the road and introduce himself to his neighbour, rather than head up to Capitol Hill and seek an appointment with the Post Master General. “In order to explain behaviour,” the authors conclude, “names [at least] must have meanings finer-grained than the property of referring to the [individual].” (p. 32)

Far from solving the problem of meaning so far, Devitt & Sterelny have at least pointed us in the right direction. Meanings have traction in the real world, no less in so far as we are disposed to act upon them. And the same is true of non-linguistic meanings. Think of the meaning of a flashing indicator light on a motor vehicle in traffic. Its meaning is exhausted by its role in signalling the disposition of the driver to make a turn ahead or change lanes. If, perhaps through want of a social convention, it had no power to signal such a disposition it would be meaningless.

Existence statements

Consider the following existence statements:

The Golden Mountain does not exist

Table Mountain exists.

Both of these sentences are true, yet if reference were all there were to meaning then the first one would be meaningless because there is nothing to which it can refer. Paradoxically, if there *were* something to which it could refer, it would simply be false. The second existence sentence is also problematic if meaning is exhausted by reference. If such sentences are meaningful then they must have a referent and so be true and hence tautologous. However by ‘Table Mountain exists’ we surely

do not mean to state the uninformative tautology 'Table Mountain exists if and only if Table Mountain exists'. Instead we mean to say something informative and factually true.

Of course we could give a truth functional analysis of both sentences, such that:

$$\sim(\exists x)[Mx \cdot Gx]$$

to mean 'there does not exist an x such that x is a mountain and x is composed of gold'; and

$$(\exists x)Tx$$

to mean 'there exists an x such that x is Table Mountain.' What this demonstrates is that there is a not too subtle difference in the meanings of these two existence sentences, the second involving a proper name. Their meanings however must still involve something other than reference.

Empty names

An empty name is a proper name without a referent and yet they occur in many meaningful contexts. Consider:

Pegasus has two wings

Odysseus was set ashore at Ithaca while sound asleep.

Given that Pegasus does not designate anything in the real world and that classics scholars are divided as to whether or not Odysseus was an actual historical figure, how could these sentences be meaningful on the view that the meaning of proper names are the objects which they designate? One response that Devitt & Sterelny do not take seriously is that they designate ideas. (p. 33) Thus while 'Pegasus' does not designate a flesh and blood creature, it does designate the *idea* or *concept* of a winged horse. However, contrast this with 'Socrates is human'. This sentence is made true by the existence of a flesh and blood historical figure, by the name of Socrates, who was human, and not by an idea or concept of Socrates in someone's mind.

Notwithstanding, we can and do designate ideas of non-existent entities meaningfully, such as:

The idea of Pegasus has inspired many artistic creations.

The meaning of this sentence issues in the real world outcome of the activity of many artists. If there were none or very few such inspired creations, the sentence would be false. So, as Devitt & Sterelny point out "the earlier existence statements [and this one] are not concerned with the existence of ideas but with that of people. *An explanation of meaning must somehow relate language to the external world.*" (Original emphasis, *l.c.*)

There is another interpretation of empty names that the authors give short shrift, that of possible worlds. Accordingly, 'Pegasus' does not designate any creature in this world, however there are possible worlds in which winged horses do exist and in which Pegasus is one of them. Therefore statements about Pegasus, such as his having two wings, are true in so far as they are about those worlds.

Far from being merely a bizarre idea about semantics, possible world interpretations of modal logics and many theories within the physical sciences are all but *de rigueur*. It is one's ontological commitment to the idea that is questionable. Does one simply mean that they describe states of affairs that could have been otherwise or are there an infinite number of parallel worlds out there in which everything that can happen does? The authors explain their scepticism in the second to next section.

Opacity

We have already come across sentences used in opaque contexts and under this rubric the authors reproduce another chesnut. Consider:

Jerry Falwell persecutes Bob Dylan

Bob Dylan is Robert Zimmerman.

According to Leibniz's rule of **substitutivity of identity** we can substitute any singular codesignational term *salva veritate* (*i.e.* preserving the truth). This applies to sentences that are **extensional** or **transparent**. Thus from the two sentences above we may infer:

Jerry Falwell persecutes Robert Zimmerman.

However from the sentences:

Jerry Falwell believes Bob Dylan destroyed the moral fibre of America

Bob Dylan is Robert Zimmerman

we may not infer

Jerry Falwell believes Robert Zimmerman destroyed the moral fibre of America,

because *logically*, the truth value of the sentence might change; ostensibly because *psychologically*, Falwell may not have been aware that Bob Dylan and Robert Zimmerman are the same person. The rule of substitutivity of identity does not apply to names in sentences that are **non-extensional** or **intensional** (with an 's') in character, such as the one above. Contexts such as these are known as opaque and according to Quine (2004 p. 356-7) "the whole quantified modal logic of necessity is dependent on context and empty otherwise..." (Wikipedia: *Salva veritate*)

Again, for names at least, the lesson is that there must be something other to the meaning of a name than reference. Before discussing Frege's idea of 'senses' however, one last example of the misapplication of the rule of substitutivity of identity in an opaque context should confirm this lesson and perhaps hint at a solution. Consider the following pair of sentences:

Cordates are cordates

Cordates are renates.

A 'cordate' is an animal with a heart, (not to be confused with a 'chordate' (with an 'h') which is an animal with a notochord.) On the other hand, a 'renate' is an animal with a kidney. As it turns out,

all animals with a heart also have at least one kidney, so that the terms 'cordate' and 'renate' both have the same extension, *i.e.* they pick out the same creatures in the world. And yet we do not want to say that 'cordate' means 'renate'. The difference in meanings must be finer-grained than their coextensional referential role and this difference again issues in certain behavioural dispositions. If, for example, a professor of Zoology were to ask a student to demonstrate that the animal they were examining was a renate, she would expect him to point to its kidney(s) not its heart.

Frege's Senses

According to Frege, **sense** (*sinn*) and **reference** (*bedeutung*) are two different aspects of meaning. Reference, as we have already pointed out is concerned with extension - what a term picks out. Sense, on the other hand provides the finer-grained meaning, being concerned with intension or the concept that a term evokes. Using the language of set theory for example, words that are coreferential like 'cordate' and 'renate' have the same reference, in that they pick out the same class of animals; however they differ in sense or intension in that they have different criteria for class membership. As it so happens, the class of cordates is coextensive with that of the class of renates. Empty names, on the other hand, such as 'Pegasus' and 'Odysseus' used in the sentences 'Pegasus has two wings' or 'Odysseus was set ashore at Ithaca while sound asleep', respectively have a sense and thus meaning, even though they fail to refer or lack a referent.

So while Frege's senses neatly explain several semantic problems, we are still in need of a theory of sense itself. According to Devitt & Sterelny,

The classical idea is that sense *determines* reference; in Frege's terminology, the sense contains "the mode of presentation" of the object... It is in virtue of its sense, together perhaps with some features of its environmental context, that a term has its reference, if any. On this view, then the sense of a word, together perhaps with some contextual features, *exhausts* its meaning. (p. 38)

If we accept that words have senses we need still need an account of sentence meaning. Recall that on the representational theory of meaning, the meaning of a sentence is its truth condition so that its "meaning is a property of representing a certain situation." The authors however reject this view, because, as they rightly point out, "there is more to the meaning of a word than its property of representing something." Instead they suggest, using Frege's "mode of presentation", that "a sentence's meaning is its property of representing a certain situation *in a certain way*, its meaning is its *mode of representing* its truth condition." On the other hand, to understand the meaning of a term is to grasp its sense, which in turn "is to grasp something that determines its reference." (p. 38-39)

Although Devitt & Sterelny have not supplied us with a definitive theory of meaning they have shifted the semantic burden for sentences from explaining truth conditions to explaining *modes of presenting* truth conditions "in terms of reference-senses-and syntactic structures." (p. 39) There are arguably as many modes of presenting truth conditions as there are types of expression, therefore this is a colossal and ongoing task for all but formal languages, one that can only be approached in a piece meal fashion. Indeed the authors devote their entire next chapter just to proper names.

Task

Have Devitt & Sterelny in their first two chapters, with Frege's help, taken us any closer to a viable account of meaning? If so, how? Alternatively, have they ended up explaining the complex notion of meaning by an appeal to the even more complex or obscure notion of senses? If so, how?

Feedback

A cursory reading of Devitt & Sterelny's first two chapters may produce the frustrated impression that we are no closer to a viable theory of meaning, save for a promissory note to explain sense in terms of its *mode of representing* truth conditions. However a closer reading reveals that the authors have, in fact, traversed considerable ground, examining, discarding, endorsing or modifying several folk and academic perspectives along the way.

Apart from describing the nature of the problem and the characteristics of human language together with a brief look into the world of language like behaviour in some other remarkable animals, the authors have described the representational (and hence truth functional) theory of meaning and found it wanting. From there they have explored contexts in which reference is necessary but not sufficient to exhaust meaning and suggested that there is a finer grained quality to meaning that a term's referential or extensional role alone fails to capture. Only then do they introduce Frege's senses as determinants of reference and portents of meaning. Even so they do not take on Frege's theory verbatim but suggest a modification that preserves some of the truth functional character of meaning together with its mode of presentation and context.

The fact that they have not unpacked the notion completely nor supplied detailed examples in every mode of expression is no indictment for what is only an introduction and first chapter. As with almost all contemporary Analytic Philosophy, there are no sweeping generalisations or grand systems. Knowledge is advanced incrementally and in a piecemeal fashion and that is very much the approach in this book, which is not to say that they have not endeavoured to be systematic. They have.

References:

- BLACKBURN, S. (2005) History of the Philosophy of Language. In *The Oxford Companion to Philosophy* 2nd Ed. (ed. Ted Honderich) Oxford University Press: Oxford
- CAREY, B. (2007) Alex, a Parrot Who Had a Way With Words, Dies. *New York Times*, September 10
- CHOMSKY, N. (1965) *Aspects of the Theory of Syntax*. MIT Press
- DEACCON, T. (1997) *The Symbolic Species: The Co-evolution of Language and the Brain*. W.W. Norton & Co., Inc.: New York
- DEVITT, M. & STERELNY, K. (1999) *Language and Reality: An Introduction to the Philosophy of Language* (2nd Edition). Blackwell Publishers Ltd: Oxford
- DONOVAN, J. & ANDERSON, H. (2006) *Anthropology & Law*. Berghahn Books.

FRISCH, K., von (1967) *The Dance Language and Orientation of Bees*. The Belknap Press of Harvard University Press: Cambridge, Mass

FOUTS, R. *et al.* (1989). *Teaching sign language to chimpanzees*. In Gardner, Beatrice & R. Allen *et al.*, eds. pp. 281 - 282. SUNY Press.

GARDNER, R. *et al.* (1989) *Teaching Sign Language to Chimpanzees*. State University of New York Press

PEPPERBERG, I. (2008) *Alex & Me: How a Scientist and a Parrot Discovered a Hidden World of Animal Intelligence - and Formed a Deep Bond in the Process*. Harper-Collins Publishers: New York

QUINE, W.V.O. (2004) *Quintessence: Reference and Modality*. pp. 356–357

SMITH, D. (1999) A Thinking Bird or Just Another Birdbrain? *New York Times* October 9, 1999

THOM, C. *et al.* (2007) The scent of the waggle dance. *PLoS Biology* **5** (9): e228

WISE, S. (2002) *Drawing the Line*. Perseus Books: Cambridge, MA.