Grounding, Mapping and Acts of Meaning
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1. Introduction: Two dogmas of reificatory semantics

What is meaning, what is it for a sign to be meaningful, how can meaning best be analyzed, and in what sense is linguistic meaning proper or unique to language? Cognitive linguistics offers answers to these questions that challenge two traditional dogmas of linguistic theory, philosophy of language and cognitive science. However, although they have notionally abandoned both these dogmas, many cognitive linguists retain an ambiguous loyalty to some of their underlying presuppositions. I hope to convince them of the necessity to review their deep theoretical commitments, in order to rebut, once and for all, the charge that cognitive semantics entails a *Subjectivist* theory of meaning.[1]

The two dogmas are: (1) the Dogma of the *Autonomy* of linguistic meaning; and (2) the Dogma of the *Compositionality* of linguistic meaning. Both these dogmas are variants of a more general, fatal misconception of the nature of linguistic meaning, namely that "Meanings are Objects": a misconception of the nature of meaning that I shall call, following Zlatev (1997), Reificatory Semantics.

Obviously, no-one would seriously propose that meanings are the kind of *physical* objects that you can put in your handbag or hide under your bed—which is why the first dogma consists of variants on the theme that meanings are "mental" (or ideal) rather than "material" objects. Yet these supposedly ideal or mental objects retain, somehow, many properties of the impenetrable, massy objects of the thing-world—particularly their decomposability into smaller units or atoms, a notion consecrated by the second dogma. The Two Dogmas of Reificatory Semantics can be spelled out as follows:

The Dogma of the Autonomy of Linguistic Meaning. Meanings are immaterial Objects. The sphere of linguistic meaning is autonomous from the material world, existing in the realm of "mental objects" (mental representations), or in the realm of Durkheimian "social facts", or in the realm of ideal, Platonic and Fregean "senses".

The Dogma of the Compositionality of Linguistic Meaning. Meanings are decomposable into (immaterial) atomic Objects, actual legal combinations of which are the meanings of expression-items, which in turn can be combined with each other in certain ways to yield semantically valid (meaningful) expressions. The atoms themselves remain unchanged throughout their various combinations.

Both of these dogmas depend upon the acceptance of a certain view of, or metaphor about, linguistic communication, which is in essence Reddy's (1978) Conduit Metaphor for communication. The conduit metaphor sees language as a conduit or vehicle for the transportation of meanings from the inside of one person's head to the inside of another person's head: for this reason it has also been called the "telementation theory" of communication (Harris, 1988). The version of the metaphor which I want to focus on as particularly relevant to the Two Dogmas of Reificatory Semantics can be called the "container-contents" metaphor of meaning and expression, where meanings are *contents* and expressions are *containers*. It can be pictured as if linguistic expressions are collections of pouches of marbles, the marbles being the atoms of meaning, and the pouches being the expression items containing the meaning-atoms. Semantics is then the theory of which marbles can legally be put in the same pouches, and which pouches can be gathered together; and syntax the theory of how the pouches are organised into ordered collections. (If you like, you can substitute handbags for pouches). It is rarely remarked, even by cognitive linguists who might be expected to notice it, that the container-contents metaphor of meaning and expression is almost built into the terminology of traditional linguistic theory, with its talk of semantic content, meaning-components, and selection restrictions.

2. "Ideas", other minds and the problem of representation

The provenance of the theory that meanings are mental objects or contents, and expressions are their containers, is of great antiquity—perhaps because the conduit-container metaphor of communication and language is so all-pervasive in ordinary discourse. The philosophical formulation of the theory is given by Aristotle: "Spoken words are the signs of affections of the soul, and written words are the signs of spoken words." Aristotle was a universalist who believed in what was later to be called the "psychic unity" of mankind; he was also a realist. He continued: "Just as all men have not the same writing, so all men have not the same speech sounds, but the affections of the soul which these signify are the same for all [universalism], as also are those things of which our experiences are images [realism]."[2]

Note then, that for Aristotle, as Harris and Taylor (1989: 33) point out, "Words ... are signs or symbols of the 'affections of the soul' (i.e. what is stored in the mind); whereas the 'affections of the soul' are *not* signs or symbols of things in the real world, but *copies* of them (although *natural* copies and therefore identical for the whole human race)." Ferdinand de Saussure (1915, [1966]) conveyed exactly this idea with his celebrated drawing of a tree. There (in the world) is a tree, here (in my head) is an imagistic "idea" of a tree, I happen to label it *tree*, Saussure happens to label it *arbre*, *et voilà*, signs are arbitrary, but concepts are not.

The same theory of meaning is expressed in slightly different terms by John Locke: "That then which Words are the Marks of, are the *Ideas* of the Speaker: Nor can anyone apply

them, as Marks, immediately to anything else, but the *Ideas*, that he himself hath."[3] Again, Saussure repeats, in almost as many words, Locke's formulation: "The linguistic sign unites, not a thing and a name, but a concept and a sound-image." (Saussure, 1966: 66).

Note, now, that Locke's formulation immediately raises a problem, the problem sometimes referred to as Hume's problem, or the problem of Other Minds. If words stand for, or express, "ideas", how can I (as speaker) be, in fact, sure that you (as hearer), actually share the same "ideas" of things as I do? Aristotle's solution was "category realism": our ideas (categories of the mind) are reflections of objective reality. We all live in the same (objective) world, and have the same experiences of that world, and this means that our concepts (images) of the things that cause these experiences (affections of the soul) are also the same.

The problem with the Aristotelian story is that, as Saussure fully recognised and illustrated with a different example, Eng. *sheep* vs. Fr. *mouton*, not only do we not all have the same speech-sounds, but "equivalent" speech sounds sometimes map to different configurations of "affections of the soul". In this case, as is well known, the French (but not the English) term maps to the meat, as well as the animal from which the meat is butchered. Aristotle's elegant story is undermined, or at least problematized, by even the most seemingly banal linguistic relativity.

At this point there seem to be three available theoretical options. The first is to accept the relativity, and locate meaning not in image and concept, but in the semantic values constituted by the system of *langue*. This is, in essence, structuralism's solution. Since, however, structuralism never explicitly disavowed its other, ideationist, commitment, to meaning as mental object, its price is incoherence and contradiction.

Given the structuralist definition of language as consisting of *a system of relationships between meanings and sounds*, structuralism's problem was: what are meanings? Its answer was twofold: meanings are, on the one hand, imagistic conceptual content mapped onto the oppositions constituting the system of expression (meanings are thus individual, mental and *prior to langue*); and meanings are, on the other hand, nothing more than a "potential" inherent in the systemic (paradigmatic and syntagmatic) oppositions which are defined in terms of expression itself (meanings are thus social and *defined by langue*). The first answer is the one Saussure gives in his illustration of the signifier-signified relation, in which the signifier (French *arbre*, English *tree*) is *arbitrarily* attached to the signified *concept* . The second answer is the one he gives in the passage where he discusses the non-identity of the or semantic values of the English lexeme *sheep* and the French lexeme *mouton*.

The two structuralist answers to the question "What is meaning?" are two different variants of the Dogma of Autonomy. In the first variant, meanings are "mental objects" defined over individual psychology; in the second variant, meanings are "social objects"

defined over "langue". Structuralism, as a general theoretical enterprise in the human sciences, not just a specific linguistic theory, was unable to produce a coherent account of the relationship between the individual psychological explanatory level, and the socio-cultural explanatory level, precisely because its original theory of meaning was contradictory, simultaneously embracing two different versions (one individual-mentalist, one social-collectivist) of the self-same Dogma of Autonomy. The contradiction was only ultimately resolved by excluding altogether reference both to conceptualization, and to language-independent reality (this was the post-structuralist terminus of structuralism).

The second option is to develop, as does formal semantics, a rigorously formal view of the meanings of terms as determined by truth conditions on their application, excluding conceptualization from consideration. The apparent clarity this buys comes, however, at the price of divorcing meaning both from experiential and ecological reality, and from "messy" natural language; substituting for the former uninterpreted "states of affairs", and for the latter a fleshless skeleton of univocal terms and formal syntax. As Lakoff (1987) showed, most of natural language is inexplicable under this approach. As Putnam (1981)showed, it also brings with it its own irresolvable logical paradoxes.

The third option is what is plumped for by cognitive semantics: to elaborate and transform Aristotle's account of experientially-based meanings, and to supplement it with a further account of how metaphoric and metonymic mappings yield other kinds of meanings. Despite its disagreement with Aristotle's "classical" theory of categorization, cognitive semantics is more Aristotelian in spirit than are either (post-) structuralism or formal semantics. Its strengths (a recognition of the constitutive role of experientially based *human* cognition in meaning, and of the centrality of imagistic processes for such cognition) are similar to the strengths of Aristotle's theory. So, however, is its great weakness: an uncertainty and ambiguity about the status of images, concepts and meanings (are they the same? If not, how are they different? Are they independent of language, or constructed in language?), and a vulnerability to the Other Minds objection (how can we be sure that *your* meanings/concepts/schemata are the same as *mine*?).

Aristotle could avoid Subjectivism by appeal to category realism. Needless to say, cognitive semantics, having (for good reason) rejected classical category realism, cannot mount this defence. In short, the weakness of cognitive semantics, as long is it is implicitly based upon the Aristotelian theory that words stand for ideas, is its vulnerability to charges of Subjectivism. The challenge for cognitive semantics is to preserve its strengths while shedding its weakness.

Consider the basic problem raised by the Dogma of Autonomy. If you view meanings as objects inhabiting a different sphere (whether this be couched in terms of the Mind, or the Ideal, or the Culture), from the mundane world of things, your are immediately forced into

the problem of how to get these immaterial objects somehow to reflect or represent the mundane, material world. This is the archetypal "Problem of Representation", the one that Wittgenstein (1921 [1961]) set out to solve in the *Tractatus Logico-Philosophicus*, and which he subsequently decided was both insoluble and the Wrong Question. How the Problem of Representation ties together the Two Dogmas of Reificatory Semantics into a philosophical Gordian knot I will examine later. For now, I shall simply mention the standard solution in philosophy of language, the "correspondence theory of truth". This states that a true proposition is one in which each expression item corresponds either to some real object(s) in the physical world, or to some real relation between two or more objects, such that the proposition truly "represents" a real state of affairs.

This is, of course, the standard Objectivist theory of meaning. We shall return to it below; for now, it is enough to say that the Problem of Representation (to which the correspondence theory of truth is supposed to be a solution) simply *does not arise* if we cease to view meanings as immaterial objects. Conversely, so long as we *do* continue to view meanings in that way, we shall be compelled to view Objectivism and Subjectivism as defining the basic parameters of the solution to this false problem. To Lakoff's and Putnam's arguments against Objectivism, I will add the following (expanding it below): the Problem of Representation *has no Objectivist solution*, since the putative Objectivist solution depends upon acceptance of the Dogma of Compositionality, which cognitive linguists have shown to be empirically false. Once again, this leaves us (as long as we remain entrapped in reificatory semantics), with Subjectivism.

Subjectivism apparently has some adherents in cognitive semantics, who believe that not only are meanings "in the head", but that the only real Reality is to be found in a mysterious entity called the Mind/Brain (as if the dualism underlying the traditional concept of "mental representation" can be spirited away by invoking a typological convention). There are many reasons for being unhappy about Subjectivism; not the least that it is widely considered to be incoherent. Fortunately, cognitive semantics does not have to embrace it, since it does not need *either* of the Two Dogmas of Reificatory Semantics, and hence need not pose the false Problem of Representation.

In claiming that the Problem of Representation is a false one, I do not mean to claim that there is no linguistic, philosophical and psychological Problem of Grounding in a wider sense—that of how linguistic expressions get to mean something, and how acts of meaning both fit with the world, and make a difference to the world. And by advocating a "non-reificatory" interpretation of cognitive semantics—that is, one in which meanings are no longer viewed as mental objects—I am not suggesting that cognition plays no role in acts of meaning. On the contrary, cognition plays a particular and specifiable role. This role is *mapping*. Mapping is a fundamental human cognitive capacity, one on which cognitive

linguists have been shedding a great deal of light in their investigations of metaphor, mental spaces and conceptual blending (Fauconnier, 1997). It is a fundamental hypothesis of cognitive linguistics that meaning involves *motivated mappings from conceptualization to expression*. This hypothesis underlies many investigations in metaphor theory, the role of iconicity in grammar, processes of grammaticalization and so forth; it is probably *the* fundamental theoretical postulate of cognitive linguistics.

Unfortunately, the cognitive linguistic thesis of Meaning as Mapping from conceptualization to expression sometimes gets confused with the quite different Reificatory Semantics doctrine of meaning-as-a-mental-object. This confusion, which is understandable, and perhaps endemic in any discussion of language as a "conceptualizing system", is illustrable by the following quotation: "Whereas objectivist theories of meaning hold that meaning exists 'in the world' and that language therefore derives meaning from reference to objects in this world, cognitive approaches offer an alternative: meaning is hypothesized to exist only through reference to a *conceptualization* of the world." (Kreitzer, 1997: 291).

If the point is to emphasize that expression is *motivated* by conceptualization, and not just *given* by reality, there can be little objection to the above formulation. As a more general statement about the theory of meaning in cognitive semantics, however, I think the formulation is ambiguous and problematic. Just what is problematic about it can be captured by asking the question: *If expression is motivated by conceptualization, what then is being conceptualized?*

There are, I submit, only two possible answers to this question:

Either (a) Conceptualization is the linguistic organization of pre-existing individual mental content.

Or (b) Conceptualization is the linguistic-conceptual organization of a Referential Situation in an intersubjectively shared universe of discourse.

I shall argue that (b) is the correct answer, thereby introducing reference (and *referential realism*) as a crucial dimension in cognitive linguistics, but also enabling us to develop a new, and different, understanding of *sense*. The reason for rejecting (a) as an answer is that it leads us straight back to the problems and paradoxes of Reificatory Semantics: If there is a mental content which precedes its linguistic organization in expression, what (if any) is the relationship between this content and the world outside language, towards which language points?

In cognitive semantics (to repeat), meanings are motivated mappings from *conceptualization* to *expression*. In standard Reificatory Semantics, meanings are mental *objects*, which are *defined* (in the standard, Objectivist account) in terms of their truth-valued mappings to an external world composed of discretely specifiable states of affairs.

Our discussion so far helps us to see why cognitive semantics is often either (mis)interpreted as, or accused of being, a Subjectivist theory of meaning. The Objectivist version of Reificatory Semantics shares with the "ideationist" variant of structuralism the view that meanings are mental objects. However, the Objectivist version of Reificatory Semantics introduces a third term into the theory: meanings (expressed by linguistic utterances, canonically by simple active declarative sentences or propositions) are defined in terms of their (correspondence-mapping) relationship to non-linguistic reality. Objectivist semantics, as we know, therefore has problems with all non-canonical cases (such as performatives, or metaphors, or counterfactuals, or almost any kind of non-declarative and "irrealis" expressions; that is, perhaps most uses of language), which it tries to circumvent by treating these as derivative "special cases". At least, though, Objectivism can claim that it has a theory of how meanings relate to the world, while structuralism does not, since it can only talk (at best) about the concept-expression relationship.

The accusation which Objectivism makes against cognitive semantics is essentially the same as that which can be made against structuralism. The accusation is: Instead of fixing meanings to reality, cognitive linguists just identify them with schemata or conceptualizations, whose relation to reality is indeterminate. The implication is: language is left just "hanging", as it were, to one end of the mapping of meaning to world, "ungrounded in" anything except, possibly, the human brain and nervous system. Unfortunately, some cognitive linguists concur with this argument, embracing a kind of neural solipsism (all that really exists is the Mind/Brain). If, however, we want to reject Subjectivism as decisively as we reject Objectivism, we need a general theory of meaning that departs from entirely different premises than the "meaning as mental object" assumption of Reificatory Semantics.

3. Intersubjectivity and referential realism

The alternative view of meaning which I shall advance is one in which meanings are not objects, but *acts* —in the general sense of Bruner (1994), as well as the specific sense of speech acts (Searle, 1969, 1995). Acts of linguistic meaning, I shall argue, are *subjectively* constructed so as to make sense in an *intersubjectively shared* universe of discourse, which is continuous with (not separate from) the material world in which other (non-discursive) human activities are carried out. This is the shared world of *joint action*, *joint attention* and *joint intention* (Shotter, 1993). This means that, rather than seeing acts of meaning as being about transferring mental representations from one individual to another, I see them as being about foregrounding matters of mutual concern in a given communicative situation.

In contrast to the conduit metaphor, in which communication is about the "ergonic" (vehicular) exchange of "mental representations", the alternative "energeic" view sees communication as social and practical *action*; and where the former views Truth as the

touchstone of meaning, the latter sees successfully achieved *joint reference* as the prototype of linguistic communication. The accounts that I shall offer of both cognition and semantics will therefore be more discursively situated, and context-dependent, than they are in either standard linguistic theory, or in many current versions of cognitive semantics. In brief, my argument is in part *against* one particular interpretation of cognitive semantics, in which meanings are held essentially to *be* concepts, or schemata, or any kind of mental representation; and in part *for* a different interpretation in which mental processes of conceptualization, schematization and perspectivization form the psychological *basis* for *discursive acts* of speaking and understanding.

Linguistic meaning is a social doing, an intersubjective accomplishing, not a thing. It would be impossible if human beings did not possess certain cognitive capacities, but to say that meaning is cognitively based is not the same as saying that it consists of mental objects "in the head". If we see cognitive semantics in the way I am arguing for, we may be able to gain new insights into that core problem of cognitive science, the *Grounding* of meaning and of natural language. And the key to understanding Grounding, I shall argue, is to understand *reference*.

John Stuart Mill may have been the first philosopher to give a hint that the "Other Minds" problem is a deceptive one, based upon the false premise that words stand for, or name, "ideas". He accepted that, in acts of meaning, we refer to the world by the mediation of our conceptualizations of it, but he rejected the further seductive conclusion that our communicative acts thereby *refer to our conceptualizations*.

Discussing naming, Mill wrote: "If it be merely meant that the conception alone, and not the thing itself, is recalled by the name, or imparted to the hearer, this of course cannot be denied. Nevertheless, there seems good reason for adhering to common usage, and calling the word *sun* the name of the sun, and not the name of our idea of the sun. For names are not intended only to make the hearer conceive what we conceive, but also to inform him about what we believe. Now, when I use a name for the purpose of expressing a belief, it is a belief concerning the thing itself, not concerning my idea of it."[4]

Mill is making a crucial point here, one that was later to be taken up in speech act theory. His point is that communicating is not, at base, a matter of "representing reality", of passing "mental" surrogates for "real things" through a conduit of language from inside my head to inside your head. Of course, it would fly in the face of reason, as he says, to think that when we refer to something by its name, we thereby "conjure up" the thing itself. If we think in terms of the conduit metaphor, it is trivially true that ideas, not things, are the currency of communication. However, says Mill, communicating is not primarily about transferring representations. Rather, to communicate is to *act*, so as to make a difference to the universe of discourse which you and I share (our beliefs being one aspect of this). Linguistic

reference works, to be sure, through the mediation of conceptualization. But that which we communicate *about*, says Mill, is not the concept, but the "thing itself".[5]

Mill, like Aristotle, is a realist: but (at least as I am interpreting this passage) his realism is based neither on the Aristotelian claim that our concepts reflect universal experiences of objectively real categories; nor upon the Objectivist claim that language itself can be made to "mirror" or transparently represent reality. Rather, for Mill, realism consists in the assumption that our linguistic expressions "point outwards" to the world about which we share and contest beliefs, desires and so on. Mill's realism is not, therefore, conceptual or categorical, but *referential*.

The primordial "pointing outwards" of reference implies a world whose *existence* is prior to any questions of the adequacy of our concepts: as Mill might put it, the existence of the "thing itself" is presupposed by whatever beliefs we might wish to communicate about it. However, and here is where I perhaps want to take the argument a step further than Mill, this "thing itself" only becomes a "thing signified" by virtue of *being referred to.* The act of referring is *intersubjective* in its fundamental structure: I refer to something *for you*, in such a way that *you can share* my reference. Now, what is referred to, on this view, is a world "outside the head": it is the world that I share with my communication partner. It is also, however, when reference is linguistic, the world which is *conceptualized in the language which I use to signify it.* In other words, we need to understand that linguistic conceptualization is an *active process* which is properly speaking *part of* linguistic reference. We conceptualize *in language, in order to refer to something, in a situation, for somebody.* Referential realism is based upon an understanding of meaning as *acting communicatively in an intersubjectively shared world or universe of discourse.*

Reference is irreducibly intentional, it involves the relationship of "aboutness" (Searle, 1983) which I am calling *signifying.* Searle believes (if I can simplify his arguments considerably) that the signifying "aboutness" of a linguistic expression derives, essentially, from the same source as the "aboutness" of perceptions. So, claims Searle, my expression "the lamp is over the table" is *about* the lamp, the table and their relationship in space, in the same way that my perceiving a lamp is *about* the lamp which I perceive, and which is the "ground" of my perception. I think this is only half the story, at most, and that cognitive linguistics and its philosophy of language can gain a vital and important insight into why this is so from developmental psychology.

I will certainly grant that there needs to be a perceptible world (or surround) for reference to make any sense at all, and that our subjectivity is fundamentally *grounded* in this perceptible world—grounded in our direct perceptions and in our non-discursive organization of embodied experience. It is a basic tenet of cognitive linguistics that linguistic meaning is made possible by its *embodied grounding*. The principal, and best-known, part of the

research programme of cognitive semantics has been the investigation of the grounding of linguistic meaning in image schemas. More liberally, but perhaps even more in keeping with the "embodied cognition" thesis of cognitive semantics, we could speak of functional, action-based, force-dynamic image schematization; a formulation which emphasises both the reliance of linguistic-communicative action upon the perceptuo-motor organization of physical action, and the active, online nature of the psycholinguistic processes permitting communication in speech and gesture (McNeill & Duncan, in press; Kita, in press). This formulation also emphasizes the developmental continuity between the organization of early object-directed action in infancy, and language acquisition (Freeman, Lloyd and Sinha, 1980; Sinha, 1982); and the developmental continuity between prelinguistic, "proto-conceptual" categorizations of objects and spatial relations in terms which go *beyond* categorical perception, but which are prior to linguistic conceptualization proper (Mandler, 1996).[6] It should be noted, too, that this formulation of "embodied grounding" is consistent with the general thrust of Piaget's epigenetic-naturalist account of the developmental roots of cognition in sensori-motor action, although it is specified differently and more fully than in Piaget's own account.

Embodied grounding, in both a psycholinguistic processing sense, and an ontogenetic sense, is one, but, I suggest, *only* one, fundamental prerequisite for linguistic conceptualization, or "thinking for speaking" (Slobin, 1996). In order fully to understand Grounding, we need to supplement an empirically rich analysis of the perceptuo-motor, actional basis of embodied grounding, with an equally empirically rich analysis of the developmental roots of linguistic reference in pre-linguistic communicative action. In doing so, we need to bear in mind that linguistic reference involves more than schematization-for-self. To *refer* implies the *picking out* or *figuration* of some aspect(s) of the schematized world, in such a way that the figured aspect is a *topic of joint and shared attention*.

Reference, it should be emphasized, is *not* intrinsically linguistic. While all linguistic conceptualization is referential, not all reference involves linguistic conceptualization. Linguistic reference has its roots in pre-linguistic episodes of joint attention, and pre-linguistic gestural reference. The ability to refer, while it may be assumed to be epigenetically based in innate initial states in the human perceptual and attentional system, is not present from birth, and its construction crucially implicates interactions between the infant and other human beings.

Although infants interact with adult caretakers almost from birth, and pay attention to objects and their dynamic relationships from 2-3 months, they do not initially coordinate interactions with persons with interactions with objects. It is as if, although infants understand that persons are special kinds of objects, they do not at first understand that persons have an attentional relationship to objects. From about 6 months, however, infants

begin to follow the direction of gaze of an adult interactant (Butterworth & Jarrett, 1991). From around nine or ten months of age infants "begin to engage with adults in relatively extended bouts of joint attention to objects ... In these triadic interactions infants actively co-ordinate their visual attention to person and object, for example by looking to an adult periodically as the two of them play together with a toy, or by following the adults gaze. Infants also become capable at this age of intentionally communicating to adults their desire to obtain an object or to share attention to an object, usually through non-linguistic gestures such as pointing or showing, often accompanied by gaze alternation between object and person." (Tomasello, 1996: 310; see also Bruner, 1975; Bates, 1976; Lock, 1978, 1980; Shotter & Newson, 1982; Trevarthen & Hubley, 1978).

The construction of joint reference in infancy is, I claim, a fundamental precondition for being able to signify semantic content in language: pre-linguistic signification in an intersubjective context of shared goals, attention and communication, lays the foundation for the discursive sharing of thought—the acquisition of linguistic meaning and the means for its expression.

The acquisition of language, in this view, is a process whereby human subjects come to appropriate the means afforded by the language which they are learning, in order to linguistically conceptualize schematized content, and conventionally (but motivatedly) signify linguistically conceptualized content (for communicative partners) in expression. The learning of expression, and the appropriation of the discursive conceptualizations of language, are not two separate processes, but a seamless whole process. This process is continuous with both the development of pre-linguistic non-discursive schematization of experience, and the development of pre-linguistic means for sharing reference.

Linguistic meaning, then, is *continuous* with *both* the embodied "having of a world", in schematized, subjective experience; *and* the referential "sharing of a world", in intersubjective experience. Continuity (and motivation), however, does not mean the same as identity. The speaking subject's significations "point outwards" to pick out some aspect(s) of the shared universe of discourse, for a hearer, but they do so through the medium of expression, in such a way that this expression organises and signifies the conceptualization in language of the picked-out aspects of the universe of discourse. Linguistic conceptualization is rooted in non-linguistic and pre-linguistic schematization, but not identical with it. Linguistic conceptualization (and reference) is *conceptualization of the world signified, not of the non-discursive schematizations which underpin linguistic conceptualizations.*

Discursive or linguistic meanings are not "in the head": they are not identifiable with or reducible to non-discursive schematizations, though non-discursive schematizations make them possible. Linguistic meanings are *not objects*, either in the head or in objective reality. They are *relationships,* but *not* between "mental objects" and "objects in the world". The

relationship which *is* linguistic meaning, is between linguistic conceptualization, and the linguistic expression by which the conceptualization is signified, and over which the conceptualization is distributed. *Meaning is a mapping relationship between a linguistically conceptualized referential situation, and a conceptually motivated expression, enabling the hearer to understand, in the context of the universe of discourse, the communicative act intended by the speaker.*

4. Meaning as mapping: sense and cognitive semantics

I have argued not only that reference is crucial to understanding meaning, but also that reference is an *act* accomplished by speakers in an intersubjective discourse situation. Reference, emphatically, is *not* a property of expressions in themselves. If we understand that it is *speakers* who refer, and that the reference of "words" to "things" is only secondary and derivative from the acts of speakers, we can also grasp the basic weakness of traditional reificatory theories of *sense*.

In Frege's philosophy of language (Frege 1892), and in the Objectivist tradition which he initiated, sense is defined as that which permits *true* reference, or correspondence, between expressions and extra-linguistic "states of affairs". The logical development of this approach, in some interpretations of formal semantics, leads to the counter-intuitive conclusion that the reference of a linguistic expression is not the state(s) of affairs to which it corresponds, but a *truth-value*. This peculiar and highly abstract conception of reference is part of the price paid by formal semantics for excluding human speakers, and their psychological processes, from its own frame of reference. The other part of the price is its definition of senses as ideal objects whose relationship to human speakers, and their psychological processes, is left vague and mysterious.

Frege himself did not believe senses to be mental entities, and attributed to them an Ideal status in a Platonic realm outside both material and psychological reality. The motivation for his "anti-psychologism" was essentially the "Other Minds" problem. Individual speakers' "ideas of things", Frege considered, were too much influenced by opinion, and by the vagaries of personal experience, to function as a secure foundation for an Objectivist theory of meaning. Frege also suspected that natural languages were insufficiently compositional to fully exemplify his theory of meaning.

Frege's theory was not primarily intended, then, as a contribution to the empirical study either of natural language, or of the human mind. However, the logical irreducibility of Fregean sense to reference came inevitably to exercise a powerful grip on linguistic and psycholinguistic theories. At the same time, neither linguists nor psychologists could be content with the Platonic metaphyics of Fregean semantics, which seemed to preclude in principle the possibility of *sciences* of either language or the mind. If Fregean senses could,

after all, and contrary to what Frege himself believed, be interpreted as "mental representations" (the building blocks of expressions in "mentalese"), then this would hold out the hope of a complete and formal account of human natural language competence. This reformulation of Reificatory and Objectivist semantics as a *psycholinguistic hypothesis* is fundamental to Classical, Symbolic cognitive science, and it is important to understand both what it entails, and why it is defeated by empirical evidence.

It is here that the Problem of Representation becomes central. Meanings, according to the Dogma of Autonomy, are mental objects (contents) which are exchanged between speakers as expression-tokens (containers). These mental objects represent the real world and its properties, and it is *because* the mental objects represent the real world and its properties, that linguistic expressions are able to refer to objects and relations in that world. Mental representation is a reflection or mirror of nature, and linguistic reference is derivative from the representational function of the mind.

Thus, in Classical, Symbolic cognitive science, a *double* mapping is postulated. The first mapping is between the "physical symbols" of "mentalese"—the Language of Thought (LoT) (Fodor, 1976) inscribed in the "Mind/Brain", and "states of affairs" in the world; and the second is between expressions in LoT, and natural language expressions. The meanings (or senses) derived from the second mapping are held to be derivative from those defined by the first mapping. Both the structure of natural language, and the structure of LoT, are formally defined as an infinite set of symbol strings, generated by specified syntactic rules. "The world" is correspondingly defined as an infinite set of possible objects, in possible relationships (states of affairs).

As we know, the problem for an Objectivist theory of natural language semantics is to hook up the infinite set of legal natural language expressions with the infinite set of possible states of affairs in the world, a problem which is widely considered, on multifarious grounds, to be insoluble both in principle and in practice. The same objection, obviously, can be levelled against a hypothetical Objectivist semantics for LoT, but there is (it is claimed) a way round this. The (claimed) solution to this problem is to sideline it, or bracket it off, by postulating *a-priori* that LoT obeys the constraint that every semantically valid and syntactically legal string in LoT univocally represents a possible state of affairs in the world (even if this cannot formally be proved, and even if this is admitted not to be the case for natural languages). This "bracketing off" is what Fodor (1980) refers to as "methodological solipsism", and the postulate arrived at by the bracketing procedure can be referred to as the postulate of semantic coherence: symbol strings in LoT are coherent with states of affairs in the world, even if a true correspondence mapping cannot be proved. The postulate of the semantic coherence of LoT is meant to save (Objectivist) realism for Classical cognitivism,

in the absence of a demonstration of the possibility of a "directly" Objectivist semantics of natural language.[7]

Coherence is (presumably) epistemologically weaker than correspondence, but *ontologically* it entails the strong condition that LoT be implemented in "a *syntactically* driven machine whose state transitions satisfy *semantical* criteria of coherence .... the brain *is* such a machine" (Fodor & Pylyshyn, 1988: 30; emphases in original). At this point, even if we grant the dubious a-priorism of the postulate of semantic coherence, the Classical cognitivist must next account for the second mapping: between the semantically coherent and univocal symbol strings of LoT, and lawful natural language expressions. To achieve this mapping, it is necessary that every semantically valid and syntactically legal expression in any natural language, including ambiguous expressions, should be translatable into at least one valid expression in LoT (in LoT, remember, it is a consequence of the postulate of semantic coherence that syntactic legality and semantic coherence coincide—there can be no ambiguous expressions in LoT).

Making Classical cognitivism work as a psycholinguistic theory, then, entails the compositionality of the meanings of symbols, such that the representational format (or syntax) of expressions may be transformed, while preserving their semantic *content*, between a syntax coherent with semantic content, and a syntax which is incoherent with (or, in generativist terms, autonomous from) semantic content. It is this requirement which the rules of natural language syntax, and the information in the lexicon (supplemented perhaps by a non-semantic pragmatics defined in terms of conversational implicature), are supposed to guarantee, by permitting an unambiguous interpretation of any given linguistic expression on the basis of *nothing but* linguistic rules and lexical semantic information.

Compositionality comes down, in the end, to the requirement that lexical meaning should be constant across combinatorial context, or at least that it should be so in as many cases as possible; and that where ambiguity arises (homonymy, polysemy) it should as far as possible be eliminable by reference only to that same combinatorial context (this is the function of so-called selection restrictions). Compositionality of meaning, even liberally interpreted, requires that appeal to referential, as opposed to linguistic, context should be held to a minimum in resolving ambiguity (or more generally, determining interpretation); that changes in combinatorial context should, if they do not yield constancy of meaning, *at most* yield *predictable* alternations between existing meanings, and *not* yield entirely new meanings; and, most obviously, that meanings should be "atomic", that is (in the general case) locally expressed by single morphemes, rather than distributed across different morphemes (except in special, rigid constructions like the French *ne ... pas* negative).

Cognitive linguistic research has conclusively demonstrated what Frege suspected: natural languages are not compositional, if compositionality is defined truth-conditionally.

The dependence of the interpretation of lexical items upon context goes far beyond a simple dichotomy between "indexicality" and "sentential context", to embrace both the conceptualized referential context and the discourse frame (Fillmore 1985, Lakoff 1987). Studies of conceptual blending and grammar (Fauconnier & Turner, 1996) have shown that linguistic constructions frequently give rise to *emergent* meanings which (though cognitively motivated) are not predictable from the meanings of the individual constituents. Studies of the semantics of space have shown that conceptualization is regularly and emergently distributed across extended syntagmatic strings, rather than being localized to particular morphemes (Sinha & Kuteva, 1995). If "compositionality" can be said to exist in natural languages at all, it has to be seen as one constraining principle among other competing ones such as blending, integration, conflation and distribution, rather than an all-embracing design-property (see also Fauconnier, this volume; Sweetser, this volume; Zlatev, 1997).

If these results of cognitive linguistic research are well known, and the consequent empirical defeat of the Classical-Symbolic "Language of Thought" hypothesis is self-evident, why, you might ask, harp on about what many cognitive linguists must regard as old news? The reason is that an explication of the "LoT" argument, its intricate theoretical contortions and its ultimate empirical failure, helps to illustrate the general point which this Chapter is intended to address: Objectivism and Subjectivism are natural (and equally erroneous) twins, conceived in the marriage between reificatory semantics and the traditional representational theory of mind. The "LoT" argument represents a retreat from a strictly Objectivist theory of natural language meaning, to an attenuated realism in which coherence replaces correspondence, and the Other Minds problem is addressed only as a methodological device for postulating a highly implausible theoretical constraint on cognitive neuroscience. The entire edifice of the "Language of Thought" theory collapses with the demonstration of the non-compositionality of natural language: if a Fodorean Language of Thought existed, it could not consistently be translated to or from natural languages.

The implications of this failure, I claim, are wider: a reificatory theory of meaning-as-mental-object *cannot* yield *any* kind of realist theory of meaning. If you start by treating meanings as mental objects "representing" real objects, you will never (however much you protest your "realist" credentials) emerge from the solipsist tunnel. Unfortunately, this is not unadulterated good news for many current approaches to cognitive semantics. The cautionary sting in the tail is that simply substituting "schema" for "symbol" does not change the import of the argument: *any* theory which sees meanings as mental objects is condemned to a Subjectivist theory of meaning. If cognitive semantics wants a coherent realist (but non-Objectivist) theory of meaning, it will have to abandon the assumption that meanings are mental objects, and along with it the granting of primary psychological reality to reified entities such as "senses".

If my argument is correct, several issues which have seemed central in cognitive semantics are in fact superficial, or just symptomatic. For example, although it is crucial for generative linguistics to minimize the attribution of lexical polysemy (in order to maximize compositionality), it is *not* crucial for cognitive semantics to maximize or emphasize polysemy, and still less to assume that lexical polysemy reflects a deep, primary psychological reality. We would do better, I suggest, to view meaning *in principle* as involving many-to-many mappings between contextualized conceptualization and expression.[8] To the extent that such mapping relations become (in the histories of either languages or of speakers) entrenched in usage, whether between conceptualization and lexeme or between conceptualization and construction, we can analyze these on divergent continua from one-to-one monosemy through polysemy to semantic vacuity; or from conflation to distribution; or from literalness to metaphoricity; or from novel blend to regular construction.

My point is not to argue for the abolition of the notion of "sense", but for its re-interpretation (see also Sinha & Thorseng, 1995). Instead of seeing senses as mental objects, schemas, or nodes in semantic networks, we should view them as *relatively stable or entrenched patterns of mapping*, from contextualized conceptualization to expression, in the course of the dynamic construction of acts of meaning, in which the goal of the action is to successfully achieve (through linguistic means) joint reference in an intersubjectively shared universe of discourse.[9]

I have argued in this and the previous section that a turn away from a reificatory view of meaning-as-mental-object, and towards a practical-communicative view of meaning as communicative action, offers an escape from the sterile opposition between an unattainable Objectivist realism and an incoherent Subjectivist solipsism. I have also argued that the "foundational" realism which cognitive semantics should embrace is *referential realism*, understood not as an "objective" relationship between language and world, but as a *practical achievement* in an intersubjectively shared world *constituted* through its conceptualization and signification in language.

Referential realism may seem, especially to those familiar with Quinean "indeterminacy of ostension" arguments (Quine, 1969), to be a weak basis for a theory of meaning. It is often held to involve nothing more than easily-defeasible "naïve realism". In the next and final section, I argue, on the contrary, not only that referential realism is psychologically and ecologically realistic, but also that it naturally (epigenetically-developmentally) merges into a *constructivist* approach to language and language acquisition. The starting point for this argument, which leads to a comprehensive, constructivist and realist theory of the Grounding of linguistic meaning, is the "primordial discourse situation" of joint, intersubjectively shared attention.

5. Towards a constructivist cognitive linguistics

At a very minimum, for anything to be the focus of joint attention, it has to constitute a Figure against a shared and presupposed Ground. This *figuration* of attentional focus is the basis of all reference, and can be accomplished non-linguistically (by pointing, or showing, or looking); or through language, in more or less complex ways ("Train!" "Daddy, train!" "There's a train!" "A train is coming out of the tunnel"). Perhaps the most fundamental principle of *linguistic construction* is that referential situations are organized in terms of successive, nested and collocated, specifications and re-specifications of Figured aspects against Grounded aspects.[10]

The Figure is salient to the subject in virtue not only of some of its physical properties, but also in virtue of the subject's psychological mechanisms which are adapted to *perceiving as salient* those very physical properties. This is so, even when the salience of the referent to the subject is involuntary (the child can't help but notice the brightly coloured, fast-moving train). When *joint reference* (the intersubjective *sharing* of Figure-Ground articulation) is accomplished, what has been achieved is the construction of a *primordial discourse situation.* The ability to intersubjectively co-construct such a situation, as we have seen, is mastered by human infants at around nine months of age. The acquisition and development of language consists in the elaboration of this ability, through the mastery of increasingly complex ways of constructing and construing reference in discourse situations that are increasingly constituted by language itself.

The voluntary, subjectively controllable specificity of the referential act increases enormously when it is accomplished through the mediation of complex constructions of linguistic expression. Natural languages, as we know from the work of Langacker (1987, 1990) and many others, afford rich and varying possibilities for constructing and construing referential situations: Figure and Ground may be reversed, Perspective may be shifted, and so forth. Fully developed linguistic conceptualization also permits reference to imaginary and non-physical entities and relations in "virtual" worlds, as well as the conceptualization of physical entities and relations in terms of "virtual" or "fictive" properties or relations (Talmy, 1990). I shall concentrate, however, on the level of the "primordial discourse situation", in which physical referents are immediately perceptually available to the discourse participants. In the primordial discourse situation, the deployment of linguistic expression in constructing and construing the referential situation is supported and constrained by the following four factors:

1. The physical properties and dispositions of the constituent aspects of the referential situation (in the real-world ecological surround).

2. The perceptual and cognitive mechanisms of the communicator which are adapted to the "pick-up" and the schematic/figurative organization of relevant aspects or features of the world.

3. The speaker's situatedness, and the speaker's awareness of the situatedness of the addressee, in the currently-obtaining Universe of Discourse.

4. The constructional means afforded to the speaker by the language for construing and conceptualizing the situation.

The first two supports/constraints constitute the primary ecological life-world (*Umwelt*) of the human organism. Taken together, they form the basis of a psychology based upon *ecological realism.* Both the existence of a mind-independent reality, and the fact of its having real parts and real properties, are asserted. At the same time, there exist certain biologically based principles of perceptual, attentional and motor organization. These include, for developing human beings, prototype effects in categorical perception, caused by the computational properties of Natural Neural Networks; mechanisms for parsing motion, events and actions; and proto-conceptual categorizations based upon spatial relations and categorical roles in event structures. These organizing (schematic and figurative) principles are either innate, or epigenetically developed through organism-environment interaction (Elman *et al.*, 1996; Plunkett & Sinha, 1992).

Ecological realism (Fettes, 1999) is in most respects equivalent to George Lakoff's (1987) experiential realism, with one difference: it pertains to the *pre-conceptual* and *proto-conceptual* level of cognitive organization, and not to conceptualization proper. Conceptualization, I am claiming, *depends* upon, and is schematically and figuratively *motivated* by, its embodied grounding in the ecological life-world, but it is neither *identical* with it, nor *reducible* to it (see Note 5).

If the first two supports/constraints together constitute one pillar, as it were, of Grounding—*Embodied Grounding*—then the third constitutes a second pillar, one that I shall call *Discursive Grounding*. Its prototype, and the simplest structure realizing it, is unadorned *joint attention* : the intersubjective sharing of an indexically present, and mutually perceived, object or event. Its constructive elaboration involves the mastery of turn-taking, deixis of person and place, perspectivization, ellipsis, theme-rheme shifts, the incorporation of previous discourse segments, and devices for establishing coherence and cohesion. Such discourse construction principles, far from being secondary superstructures upon a mythic "pure propositional content", constitute the *basic functional motivation* of linguistic construction. They can be seen as providing a *communicative and cognitive bridge* between embodied grounding—the grounding of language in non-discursive schematizations—and linguistic conceptualization proper. My claim, then, is that the solution to the "Problem of Grounding" is twofold: there is a *dual grounding* of language and linguistic cognition, first

Embodied Grounding, and second Discursive Grounding. And *both* of these "twin pillars" of human natural language flow, naturally and logically, from a commitment to, and an analysis of, linguistic meaning in terms of both ecological and referential realism.

We come now to the fourth support/constraint. This is inherent in language: in a quite fundamental sense it simply *is* language, viewed as a symbolic system. Since the first three supports which together make up the embodied and discursive grounding of meaning are also *constraints* upon what can be conceptualized and what can be expressed, natural languages are *motivated, non-arbitrary* symbolic systems. The fourth support-constraint is best conceived as the *specifically linguistic* mediational means, or semiotic vehicle, whereby the three other supports/constraints are integrated in the actual construction of acts of linguistic meaning. It is the system of mappings, from *articulated conceptualization*, to *articulated expression*, whose elucidation is the goal of cognitive linguistics. Linguistic conceptualizations (particular acts of linguistic meaning), and linguistic cognition (the cognitive capacity of subjects to produce and understand acts of linguistic meaning, or "think for speaking" in Slobin's felicitous expression), are, in this view, *language-dependent* : they depend upon the mastery of the symbolic means of linguistic expression.

This last proposal is by no means so self-evident and tautological as, at first sight, it seems. Many semantic theories hypothesize the existence of a universal, non-linguistic conceptual representational system, on the basis of which the specific semantic structures of any particular natural language are erected. Such theories are "ideationist" variants of the Reificatory Semantics that I have criticized throughout this Chapter. Empirically, the hypothesis of a universal non-linguistic conceptual system is difficult to reconcile with evidence that (at least in the cognitive and linguistic domain of space) semantic development in children follows a *language specific* rather than universal course (Bowerman, 1996). Not only does the adoption of the theoretical approach I am advocating render such a hypothesis unnecessary, but it in fact *precludes* it. There is, if this account is correct, *no possible developmental mechanism* which could secure (or ground) a conceptual-semantic system, in the absence of the acquisition of the means by which conceptualizations are expressed, and joint reference accomplished, in real discourse.

Language acquisition, in this view, consists essentially of two concurrent, parallel and mutually-dependent processes: the *semanticization* of the perceptuo-motor and proto-conceptual systems of schematic pre-linguistic cognition; and the *grammaticalization* of the signifying means for accomplishing joint reference. More simply, to use a modified Vygotskian formulation, language acquisition is the interactive, dual process of the semanticization of child thought and the grammaticalization of child speech.[11] In the course of acquiring language, and becoming a member of the surrounding speech community, the child develops the increasing ability to participate in acts of meaning grounded in a universe

of discourse constituted by language itself. In this sense, it is not only the case that meaning grounds all of language; it is also the case that language, as a cognitively entrenched, normative means for accomplishing complex co-ordinations of reference in symbolically constituted intersubjective fields, grounds meaning.

6. Concluding note: the importance of development

The point of view that I have advanced and defended in this Chapter is very similar (perhaps identical) to the one argued for by Peter Harder (this volume). Both Harder and I press a case for a "dual grounding" view of language and linguistic cognition, one which recognises the centrality of *both* embodied grounding *and* functional or discursive grounding. As I see it, part of the underlying motivation for this view is a desire to escape from the restrictive scientific orthodoxy which says that you can have *either* an individual-cognitive, *or* a social-functional, view of language, but you can't combine the two (and we all know which one of them is supposed to be more "scientific"). Harder and I both argue, on the contrary, that you simply can't understand the one without the other (see also Itkonen, 1997). Even more strongly, I would say (and I expect Harder would agree) that there simply would be no such a thing as human natural language, and linguistic cognition, were it not for its socio-cultural context. This proposition can be understood both in terms of the evolution of the human species, and in terms of the developmental processes underlying child language acquisition.

Cognitive linguistics is the first (at least the first successful) truly dynamic approach to human language and cognition. As a developmental psycholinguist, I would like to see this dynamic approach extended to a recognition of the centrality of the developmental perspective to our joint enterprise. The constructivist (or emergentist, MacWhinney 1999) perspective that I am advocating for cognitive linguistics sits naturally with a constructivist and emergentist approach to language development and cognitive development. Constructivism (emergentism) is the dynamic and materialist alternative to both eliminativist reductionism, and Cartesian rationalism. It is scientific, but not scientistic; empirical but not empiricist; it recognises the irreducibility of subjectivity without being subjectivist; it is realist but not objectivist.

We need, of course, more cognitive linguistic inspired empirical studies of language acquisition. But we also need to incorporate the developmental perspective into the heart of our understanding of the human language faculty: not as one innate module (or subset of modules) amongst others, but as one aspect of an integrated yet complexly differentiated

embodied neuro-cognitive system, functionally coupled and co-evolving with its socio-cultural surround.

Notes

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[1] By "Subjectivist" I mean, in essence, the philosophical stance that our only access to the world is via our individual, private perceptions and ideas of it, and that only these private perceptions and ideas can therefore be said really to exist. "Subjective Idealism" was systematically expounded by Bishop Berkeley, after whom one of the campuses of the University of California is named. Immanuel Kant said that he had been awoken by Berkeley from his "dogmatic slumbers", and regarded it as his duty to combat what he regarded as the philosophical "scandal" which Berkeley propagated. Not all cognitive linguists regard Subjectivism as scandalous. A few embrace it and many more, I would say, teeter nervously on the brink of falling headlong into it. I agree with Kant, if not in his solution, at least in his diagnosis. See Section 2 on the "Other Minds" problem.

[2] W.D. Ross (ed.) *The Works of Aristotle,* Vol. 1, transl. E.M. Edghill, Oxford, Clarendon Press, 1928, 16a.

[3] *An Essay concerning Human Understanding* (1690), Book III, Ch. 2, section 2. Later (Book III, Ch. 11, section 5), Locke depicts language as "the great Conduit, whereby Men convey their Discoveries, Reasonings and Knowledge, from one to another." Cited in Harris and Taylor (1989: 109).

[4] *Collected Works*, 1974, Vol. VII, pp. 24-25.

[5] The theory of performatives is based upon the recognition that, in some (performative) cases, the meta-reference to the speech act does indeed, under appropriate conditions of authorization of speakers, bring into existence or "conjure up", the situation referred to in the speech act: e.g. "I pronounce you man and wife". There are many other secondary issues here, which I won't address yet; such as, how it is after all possible to have beliefs about one's ideas, such as to believe that one's understanding of the theory of relativity is incomplete; how imaginary entities figure in all this, and so on.

[6] Jean Mandler, in the paper cited here, posits a pre-linguistic "conceptual level of representation" which is based upon "perceptually analyzed" image-schematic "meaning packages", which "language can put together in a variety of ways". I wish to resist this formulation, and signal this disagreement by using the term "proto-conceptual". I agree entirely, however, with Mandler and her colleagues that these "non-discursive schematizations", as I call them, go *beyond* perception (including beyond categorical perception). This is not simply a quibble: there is, I would argue, *continuity* between pre-linguistic cognition (functional-actional image schematic understanding), and linguistic conceptualization ("thinking for speaking"), but not *identity*. Identity would imply both that the acquisition of language leaves the proto-conceptual level untransformed, and that the semantic

systems of all natural languages are reducible to a universal non-linguistic conceptual system (whether modular or not). I explicitly reject such a hypothesis in the final section of this Chapter.

[7] In effect, this amounts to "saving" Classical cognitivism from Searle's "Chinese Room" argument (Searle, 1980) by accepting the argument but moving back one step and starting over again: a case of having your cake and eating it. It could be added, though, that Searle himself comes very near to exactly this kind of reasoning in proposing that the intentionality of linguistic reference derives from the intentionality of perception.

[8] I am using this formulation as a shorthand for: *the mapping relationship between a linguistically conceptualized referential situation, and a conceptually motivated expression, enabling the hearer to understand, in the context of the universe of discourse, the communicative act intended by the speaker.* (See Section 3).

[9] In (at least partial) support of this interpretation of "sense", I cite Karl Bühler (1933) [Innis, 1982: 125]: "Plato called objects that manifest similarities [to linguistic meanings] *Ideas* … That we have transformed the 'eternal and immutable' into 'intersubjective'…only needs to be said in order to exclude misunderstandings." A similar perspective is to be found in the writings of Vygotsky (1978, 1986).

[10] Both developmentally and processually, Figure-Ground specification and re-specification is the basic psychological mechanism underlying the formal notions of predication and proposition. Although Figure-Ground and topic-comment (or theme-rheme) structuration are functionally differentiated during development, they initially coincide. The ontogenetically formative *communicative* context of "pre-predication" is that of joint action, but topic-comment separation and re-combination can also be observed in the solitary play of infants with objects before the end of the first year of life (Bruner, 1975). Thanks to Jordan Zlatev for raising the important issue of predication in his comments on an earlier draft of this chapter.

[11] "Speech" taken to be inclusive of visual-manual sign language signs. Slobin (1997 :313) points out that "some of the notions that are salient to small children are also salient in the process of grammaticization", but also emphasizes that language acquisition and diachronic grammaticalization processes should not be identified or assumed to be parallel: "Speech communities are at work (very slowly) in modifying grammars. Children are at work (quite quickly) in mastering *already existing* grammars." (p. 314).

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