

UNIVERSAL GRAMMAR AND SPEECH ACT THEORY

Daniel Vanderveken
Université du Québec, Trois-Rivières

As philosophers and universal grammarians of the classical age have already pointed out, the primary functions of language are to enable human speakers to express and communicate with accuracy and efficiency their conceptual thoughts.¹ Thus one can raise the question: *Are there transcendent features that any natural language must possess in order to be able to fulfil its two basic functions of expression and of communication, and if yes, what is their nature?* According to speech act theory, the primary units of meaning in the use and comprehension of language are not isolated propositions but rather speech acts of the type called by Austin (1962) *illocutionary acts*. Speakers who make meaningful utterances of elementary sentences always relate propositional contents to the world with a certain illocutionary force. They mean to perform in the context of their utterances elementary illocutionary acts such as assertions, questions, orders, declarations and thanks. It is part of what they intend to communicate to their hearers. Moreover they contribute to conversations with the intention of performing with other speakers *collective illocutionary acts* such as exchanging greetings, giving news, making a deliberation or changing things by way of making official declarations. Because speakers express and communicate their thoughts in the very performance of illocutionary acts, speech act theory contributes to the theory of linguistic universals in formulating the necessary and universal laws governing the successful performance and satisfaction of all kinds of illocutionary acts in language use and comprehension. *As I will argue, the logical form of illocutionary acts imposes certain formal constraints on the logical structure of a possible natural language as well as on the mind of competent speakers. In particular, certain syntactic, semantic and pragmatic features are transcendent and universal because they are indispensable.* A language deprived of such features would not provide for its human speakers adequate means of expression and of communication of their conceptual thoughts. *Moreover, if linguistic competence is the ability to perform and understand illocutionary acts, then competent speakers and hearers must have certain mental states and abilities which are, in general, traditionally related to the faculty of reason.* For example, speakers must be able to refer and predicate and to distinguish truth from falsehood, success from failure and satisfaction from dissatisfaction. They must also be able to make certain theoretical and practical valid inferences and to coordinate intelligently their contributions to discourse. Otherwise, they would not be fully able to use and understand a

language. As we will see, *there is an internal relationship between the basic functions and the deep structure of language*. Natural languages offer a vast vocabulary and a rich grammar to express forces, propositions and illocutionary acts. The surface structure of their sentences can be misleading. However, speakers apprehend their deep structure in meaning and understanding. And it appears that the logical form of linguistic expressions which express transcendent features of speech acts is exactly the one which is appropriate to their function.

Illocutionary acts such as assertions, questions, refusals and offers which are performed at a single moment of utterance by way of uttering sentences in appropriate contexts are *first level illocutionary acts*. *Elementary illocutionary acts of the first level are of the form F(P); they consist of an illocutionary force F² and a propositional content P*. Speakers who mean to perform an elementary illocutionary act may have all sorts of intentions and perlocutionary goals. But they always have the intention to achieve an illocutionary point on the propositional content. According to illocutionary logic³ the five illocutionary points of language use are: the *assertive point* which consists in representing how things are in the world, the *commissive point* which consists in committing the speaker to doing something, the *directive point* which consists in trying to get the hearer to do something, the *declaratory point* which consists in doing something by way of representing oneself as doing it and the *expressive point* which consists in expressing attitudes. Elementary illocutionary acts are expressed in natural languages by elementary sentences containing a *marker* and a *clause* expressing respectively a force and a propositional content in each possible context of use. Common examples of force markers are verb mood and sentential types. Thus declarative sentences serve to make assertions. Imperative sentences serve to give directives and interrogative sentences to ask questions. Performative sentences serve to make declarations. (As Searle and I pointed out, successful performative utterances are declarations whose propositional content is that the speaker performs the speech act named by their performative verb.⁴) And exclamatory sentences serve to express the speaker's attitudes. *Illocutionary denegations* such as refusals and disapprovals, *conditional speech acts* such as offers and *conjunctions* of illocutions such as warnings and alerts are *complex first level illocutionary acts* which are expressed by sentences containing illocutionary connectives such as "I do not accept your offer", "If you want, I promise to help you" and "The road is slippery: pay attention!" or corresponding performatives.

Speakers seldom speak and talk just for the purpose of making isolated individual utterances. On the contrary, they interact verbally with other speakers in *conversations* and perform their individual illocutionary acts with the collective intention of conducting joint *interventions* such as exchanging salutations, making a report, a consultation or a negotiation, or doing things by making common declarations. In conducting interventions, protagonists in a conversation attempt all together to achieve *discursive goals*: they intend to

describe how things are in the world (*descriptive goal*), to deliberate on their mutual future actions (*deliberative goal*), to transform the world by way of declarations (*declaratory goal*) or simply to express common attitudes (*expressive goal*). As I pointed out⁵, exchanges whose type is provided with an internal discursive goal are also illocutionary acts that speakers mean to perform in language use. From a logical point of view, such exchanges are *collective higher order illocutionary acts*: they are performed jointly by several speakers and they last during an interval of time containing several successive moments of utterance.

By their nature, all kinds of conversation and discourse (whether they have an internal point or not, whether their point is linguistic or extra-linguistic) are composed of one or several interventions with a discursive goal. *So there is a hierarchy of different levels of units of meaning and understanding* in the use and comprehension of language. Each *language game* that speakers play in exchanging words in common forms of life is a sequence of verbal and non verbal interventions, verbal exchanges with a discursive goal being in turn sequences of first level illocutionary acts. In order to conduct such interventions, speakers coordinate their meaningful utterances and attempt to perform some of their individual elementary illocutionary acts with the intention of achieving a common discursive goal. They can use discourse verbs such as “describe”, “explain”, “deliberate”, “bet”, “negotiate”, “contract”, “exhort”, “bequeath” and “welcome” in order to express the type of intervention that they want to conduct. Imperative sentences like “Let us explain why this happened!”, “Let us make a contract” serve to invite other speakers to make certain types of intervention. Some discourse verbs can be used performatively: “I bet you 5 dollars that they will win”, “I exhort you to be brave”. One can find many performative discourse verbs in Austin’s list of expositives: “illustrate”, “argue”, “recapitulate”, “answer”, “quote”, “answer”, “reply”, “object”, “conclude”, “deduce”, “analyze”, “formulate”, “class”, etc.

Interventions with a discursive goal have a *discursive type* as well as a *theme*. One can deliberate on different questions, just as one can report different stories. Language distinguishes different discursive types with the same discursive goal just as it distinguishes different illocutionary forces with the same illocutionary point. Pledges, promises, threats, acceptances and vows are commissive illocutions with different forces to be performed under different conditions. In analyzing illocutionary forces, *Searle and I decomposed each force into six components: its illocutionary point (the main component), its mode of achievement of illocutionary point, its propositional content conditions, its preparatory and sincerity conditions and its degree of strength*. In order to be identical two illocutionary forces must have the same six types of components. Otherwise they play different linguistic roles in the expression of propositional contents. Similarly, negotiations, sermons, bargaining sessions, attempts at

friendly settlements and contracts are types of deliberative interventions which are to be conducted under different conditions. *In addition to a discursive goal, discursive types of interventions have four other types of components: a mode of achievement of discursive goal, thematic conditions, background conditions and sincerity conditions.* Discursive types with different components are different; they play different roles in the conduct of conversation.

By virtue of their logical form, illocutionary acts have success and satisfaction conditions. Illocutionary acts are by nature intentional actions that speakers always attempt to perform. As is the case for *human actions* in general, attempts to perform such acts can *succeed* or *fail*. For example, in order to put himself under a legal obligation to do something, a speaker must succeed in expressing to which action he intends to commit himself. Moreover he must have the right to put himself under that obligation. In order to make a contract, parties must act in concert with each other and make joint reciprocal commitments to future actions. Moreover, illocutionary acts are directed at objects and facts and, even when they are successful, they can still fail to be satisfied, when the world does not fit their propositional content. We can make false assertions and break our promises. We can also disobey directives. So our descriptions can be inexact and our deliberations not respected. Sincere speakers want their attempted illocutionary acts to be both successful and satisfied.

The *conditions of success* of an illocutionary act are the conditions that must be fulfilled in order for one or several speaker to succeed in performing that act. As I said earlier, first level illocutionary acts are successfully performed in single contexts of utterance, and higher level illocutionary acts in speech situations during an interval of several successive moments of utterance. *The notion of a condition of satisfaction is a generalization of the notion of a truth condition* which is necessary to cover all kinds of illocutionary acts. Just as an assertion is satisfied when it is *true*, a command is satisfied when it is *obeyed*, a promise is satisfied when it is *kept*, a request is satisfied when it is *granted*, and similarly for all other illocutionary forces. *Interventions are satisfied when their master illocutionary acts are satisfied.* Thus parties respect a contract when they keep their main reciprocal commitments. The two types of success and satisfaction conditions of illocutionary acts are not reducible to truth conditions. As one cannot attempt to perform or understand illocutionary acts without understanding their success and satisfaction conditions, the primary objectives of speech act theory are to elaborate recursive theories of success and satisfaction.

From a philosophical point of view, speech act theory contributes to universal grammar for various reasons.

Natural languages have a vast vocabulary for specifying illocutionary act types and propositions. But they are ambiguous and their grammatical conventions are complicated so that it is difficult to directly analyze the underlying logical form of attempted illocutionary acts. First, there is no one-to-

one correspondence between illocutionary forces and performative verbs or force markers in natural languages. "Illocutionary forces are, so to speak, natural kinds of language use, but we can no more expect the vernacular expressions to correspond exactly to the natural kinds than we can expect vernacular names of plants and animals to correspond exactly to the natural kinds"⁶. Thus, some possible illocutionary forces are *not actual* today in English. For example, one can no longer repudiate one's wife and break off one's marriage by uttering words, as one could do in past civilisations in certain ways fixed by custom. Some possible illocutionary forces are actual in English but are not realized syntactically or lexicalized. For example, there is no marker in English for commissive illocutionary forces. A speaker cannot directly commit himself in English to carrying out a future action. He can commit himself indirectly to doing something by way of asserting, for example, that he will do it. He can also commit himself performatively by way of making a declaration ("I promise to do it"). Furthermore, performative verbs like "tell" and "swear" are ambiguous between different illocutionary points. One can assertively swear that something is the case, just as one can commit oneself in swearing to do something. Expositive performative verbs like "reply", "remark" and "conclude" do not name interventions whose type is provided with an internal discursive goal. Conclusions can be descriptive, deliberative, declaratory or expressive.

A second reason for distinguishing carefully between illocutionary forces, on the one hand, and performative verbs and illocutionary force markers, on the other hand, is that *natural languages are not perspicuous*. Many sentences of the same syntactic type (for example, the declarative sentences "He is dead", "Frankly, he is dead", "Alas, he is dead", "Of course, he is dead") express illocutionary acts with the same illocutionary point but different forces. Similarly, performative verbs with a superficially similar syntactic behaviour (for example, "order", "forbid" and "permit") do not have the same logical form. Only the first verb "order" names a directive illocutionary force, for an act of forbidding something is just an order not to do it. Furthermore an act of granting permission is the illocutionary denegation of an act of forbidding. Finally, performative verbs like "argue", "inform", "state", "present", "claim" and "criticize" can name an illocutionary force as well as a discursive type.⁷

One should not trust the surface structure of ordinary language too much. As I argued⁸, it is better to analyze indirectly the deep structure of ordinary sentences *via* their translations in an ideal perspicuous disambiguous formal object language. *I have used for that purpose in formal semantics of success and satisfaction the ideographic language of a higher order unified illocutionary and intensional logic⁹ containing a revisited propositional logic where strictly equivalent propositions are distinguished*. One advantage of using an ideographic language in illocutionary logic is to have at one's disposal a theoretical vocabulary thanks to which any expressible illocutionary act can in principle be

analyzed in a canonical way and be put into relationships with others. Another advantage is that, contrary to what is the case in ordinary language, the grammatical forms of the sentences of the ideography reflect clearly on the surface the logical forms of the illocutionary acts that they express. Thus one can exhibit *via* translation the logical form of illocutionary acts that ordinary sentences serve to perform.

All the logical constants and syncategorematic expressions of the ideographic object language of illocutionary logic express *universal features of language* such as identity, success, truth, functional application, λ -abstraction and abstraction over circumstances. So in formulating the syntactic rules of formation and abbreviation of this ideal language, the meaning postulates governing its expressions in possible interpretations and an axiomatic system illocutionary logic makes universal claims about the deep structure of language. *Thanks to the new ideography, richer fragments of natural languages containing sentences of all syntactic types (declarative as well as non declarative sentences) can now be interpreted indirectly in logic.* There is no more need to reduce non declarative to declarative sentences for *ad hoc* theoretical reasons. Formal semantics can analyze the proper meaning of non declarative utterances just as illocutionary logic analyzes the proper nature of non assertive forces. In the philosophy of mind underlying speech act theory,¹⁰ conceptual thoughts with different directions of fit are different.¹¹

As Montague (1974) pointed out, by way of translating clauses of ordinary sentences into the ideal object language of intensional logic, formal semantics clarifies the logical form of propositions and proceeds to a better explication of the meaning and truth conditions of declarative utterances. Similarly, by way of translating force markers and performative verbs into the ideographic object language of illocutionary logic, formal semantics can exhibit the logical form of illocutionary acts and proceed to a better explication of the meaning and success and satisfaction conditions of all types of utterances.¹² According to Cocchiarella, “This enlarged framework is not at odds with Montague’s intensional logic, it should be emphasized, but is really a conservative extension of the latter that simply adds a recursive theory of success and satisfaction to Montague’s theory of truth.” (p 71)¹³.

Given the nature of conceptual thought, one can argue that there are in all possible languages *linguistic universals* on the side of illocutionary forces and discursive types as well as on the side of propositions and discourse themes. Expressions which name linguistic universals lend themselves to *radical translation* in the sense of Quine (1960). *Any lingua philosophica adequate for the expression of thoughts must therefore contain logical constants or syncategorematic expressions representing these universals.* There are two kinds of linguistic universals: material and formal universals.

Material linguistic universals

From a theoretical point of view, *material linguistic universals* are basic elements of thought like predication, illocutionary points and discursive goals which are constitutive of the deep logical structure of language. So the ideographic language of illocutionary logic must contain basic expressions for the act of predication and the five assertive, commissive, directive, declaratory and expressive illocutionary points. In order to represent how things are in the world, we must predicate of them properties or relations.¹⁴ We would not be able to express elementary propositions representing atomic states of affairs and events of the world in a language deprived of predication. For atomic facts exist in a circumstance when objects have certain properties or stand in certain relations in that circumstance. In order to represent atomic facts we must refer to their objects and predicate of them attributes (i.e. properties or relations). Elementary propositions serve to represent atomic facts in language use: they are true in a circumstance if and only if objects have in that circumstance predicated attributes.

Furthermore, speakers would not be able to perform all types of illocutionary acts in a language deprived of the five different illocutionary points, for such a language would not distinguish all the different possible basic ways in which we can relate in an act of thought propositions to the world with the aim of establishing a correspondence between words and things from a possible direction of fit. So possible natural languages must contain force markers or illocutionary verbs expressing assertive, commissive, directive, declaratory and expressive illocutionary forces, just as they must contain elementary sentences expressing elementary propositions that represent facts of the world.

The theory of satisfaction of speech act theory is based on the traditional *correspondence theory of truth* for propositions.¹⁵ Whenever an elementary illocutionary act is satisfied in an actual context of utterance, there is a *success of fit* or *correspondence* between language and the world; the propositional content of the illocutionary act corresponds to an actual fact in the world. However, as Searle and I pointed out, there is more to the notion of a condition of a satisfaction than the notion of truth condition. *In order that an elementary illocutionary act of the form F(P) be satisfied in a context of utterance it is not enough that its propositional content P be true in the circumstance of that context. The correspondence between language and the world must be established following the proper direction of fit of its illocutionary force F.* In order to obey an order, it is not enough to carry out the ordered action. One must carry out that action with the intention of obeying that order. A hearer is not obedient when he or she carries out an ordered action for another reason.

According to illocutionary logic, *there are four possible directions of fit between words and things in language use to which correspond exactly the five assertive, commissive, directive, declaratory and expressive illocutionary points of elementary illocutionary acts and the four descriptive, deliberative,*

*declaratory and expressive discursive purposes of interventions*¹⁶:

The words-to-world direction of fit.

An elementary illocutionary act whose force has the words-to-world direction of fit is *satisfied* (or *true*) when its propositional content fits a fact existing (usually independently) in the world. *Illocutionary acts with the assertive point* (e.g. assertions, conjectures, predictions) *have the words-to-world direction of fit*. Their point is to represent how things are. Thus, in the case of assertive utterances, the words must correspond to the objects of reference as they stand in the world. At the level of discourse, *interventions whose discursive goal is descriptive* (e.g. reports, presentations, interviews, diagnoses and explications) *also have the words-to-world direction of fit*. They serve to describe what is happening in the world. So the master speech acts of descriptive interventions are assertive. And descriptive interventions are *satisfied* (or *exact*) when their master assertive illocutions are true.

The world-to-words direction of fit.

An elementary illocutionary act whose force has the world-to-words direction of fit is satisfied when the world is transformed to fit the propositional content. *Illocutionary acts with the commissive or directive point* (e.g. promises, vows, acceptances, requests and orders) *have the world-to-words direction of fit*. Their point is to have the world transformed by the future course of action of the speaker (commissives) or of the hearer (directives) in order to match the propositional content of the utterance. In this case, the things in the world have to be changed to correspond to the words uttered in the performance of the illocutionary act. At the level of discourse, *interventions whose discursive goal is deliberative* (e.g. sermons, negotiations, bargaining sessions, attempts at friendly settlements and exhortations) *also have the world-to-words direction of fit*. They serve to deliberate on which future actions speakers and hearers should commit themselves to in the world. So their master speech acts are both commissive and directive. Deliberations serve both to commit speakers and to attempt to commit hearers (who are always potential speakers) to reciprocal future actions. Deliberative interventions are *satisfied* (or *respected*) when their master commissive and directive illocutions are satisfied (that is to say respectively *kept* and *followed*).¹⁷

The double direction of fit

An elementary illocutionary act whose force has the double direction of fit is satisfied when the world is transformed by an action of the speaker to fit the propositional content by the fact that the speaker represents it as being so transformed. *Illocutionary acts with the declaratory illocutionary point* (e.g. definitions, appellations, appointments, benedictions and condemnations) *have the double direction of fit*. Their point is to get the world to match the propositional content by saying that the propositional content matches the world. In successful declarations, objects of reference are then changed to correspond to

words in the very utterance of these words. *Interventions whose goal is declaratory* (e.g. inaugural addresses, testaments, licences, discourses held in promulgating laws and in ceremonies of christenings and weddings) also *have the double direction of fit*. They serve to transform the world by way of declarations. They are satisfied when their main declarations are successful.

The empty direction of fit

For some elementary illocutionary acts, there is no question of success or failure of fit. Their propositional content is in general presupposed to be true. *Illocutionary acts with the expressive point* (e.g. apologies, thanks, complains, boasts) *have the empty direction of fit*. Their point is just to express (or manifest) the speaker's mental state about a represented fact. Thus, in expressive utterances, speakers do not attempt to represent how things are (they, in general, presuppose that they are as they say) and they do not want to change things. They just want to manifest what they feel about them. So expressive illocutions are not satisfied or unsatisfied. They are rather appropriate or inappropriate. *Interventions whose goal is expressive* (e.g. exchange of greetings, welcomes, eulogies, public manifestations of faith) also *have the empty direction of fit*. They serve to express common attitudes of their speakers and their master illocutionary acts are expressive.

Formal linguistic universals.

Unlike material universals, formal universals are not basic transcendent elements of thought. But they are formally equivalent universal rules of closure of sets of transcendent features. Clear examples of formal linguistic universals are the truth functional operations on propositions and the few operations on illocutionary forces which consist in adding to forces new modes of achievement of their illocutionary point, new propositional content, preparatory or sincerity conditions or in increasing and decreasing their degree of strength. As is well known, a language deprived of truth functions could not serve the purpose of representing all the complex facts that exist in the world. As I said earlier, basic states of affairs and events which we experience in the world are represented by elementary propositions predicating attributes of objects of reference. But there are more complex facts whose existence in the world is compatible with the existence and non-existence of basic facts.¹⁸ For example, there are negative facts which exist when basic facts do not exist. Truth functions are needed to represent such complex facts. So according to philosophers, linguists and logicians such as Frege, Russell, Chomsky, Quine¹⁹ and Montague²⁰, *truth functions are semantic universals*. They obey universal laws of Boolean algebras.

Similarly, on the side of illocutionary forces, the *few Boolean and Abelian operations on components of illocutionary forces enable the speakers of each language to relate propositions to the world with all the actual forces which are linguistically significant in their linguistic community*. When a mode of achievement and a propositional content, preparatory or sincerity condition are

linguistically significant for a linguistic community, they can always be incorporated in actual illocutionary forces of the language of that community by adding them to actual forces.²¹ For example, the force of commands is actual in any language where speakers can invoke a position of authority over hearers. For commands are directives given from a position of authority. And similarly speakers can increase or decrease the degree of strength of actual forces in every natural language. So the force of pledge is universal, for to pledge is just to commit oneself strongly to doing something. Just as each possible natural language must give to its speakers adequate means of expressing all the truth functions of the elementary propositions that they can express in that language, so it must enable them to express propositions with all complex illocutionary forces that can be obtained by adding new linguistically significant components or by increasing or decreasing the degree of strength of simpler forces.

According to Searle and other philosophers of mind, there is *a general principle of expressibility of conceptual thought*. Any conceptual thought (let be it a state or an act) that a human being can have in mind is in principle *expressible* in the use of language in the performance of an illocutionary act. Because there are necessary and sufficient laws governing the successful performance and satisfaction of speech acts of certain logical forms in all languages, illocutionary logic is *transcendental* in the sense of Kant²² and of the first Wittgenstein²³. Indeed *the theory of success of illocutionary logic fixes limits to language use which restrict what can be thought, just as its theory of satisfaction fixes limits to the world which restrict what can exist and be experienced*. From a transcendental point of view, any state of affairs or event that a human being can experience in the world is a fact that he or she could represent in having a thought directed at that fact. Moreover, he or she could always in principle express that thought in the successful performance of an illocutionary act representing that fact. Thus, a logic of speech acts describing adequately necessary and sufficient conditions for the successful use of language also serves to articulate *a priori forms of conceptual thought*. What makes universal success conditions of illocutionary acts *a priori* is that it is not possible for us ever to have a thought whose expression in language use would violate them. For they are conditions of possibility of the very determination of speaker meaning and understanding. Of course, as Wittgenstein pointed out in the *Tractatus*, the logic of language only delimits what can be thought *indirectly* by way of fixing limits to possible linguistic expressions of thought. Otherwise, we would have to think what cannot be thought in order to fix such limits. According to speech act theory, *the limits of thought show themselves in language* in the fact that sentences of certain logical forms are *illocutionarily inconsistent* (in the sense that they express non performable illocutionary acts) or *analytically unsuccessful* (in the sense that they can never be used literally with success in any possible context of utterance). We often think of impossible thoughts and even

describe their logical forms in logic and philosophy. However, we never entertain impossible thoughts *in the first person*, just as we can never use with success an illocutionarily inconsistent sentence without meaning something else than what we say. So illocutionary logic, in so far as it contributes to universal grammar, is a work in transcendental philosophy in the classical tradition of *lingua philosophica*.²⁴

Now, what are the different kinds of universals that can be studied in speech act theory? And how can we confirm the necessary existence of such universals in all possible natural languages? As I pointed out in *Meaning and Speech Acts*, a first way to discover universals of language use is to study the nature of transcendent features such as meaning, sense, denotation, illocutionary force, proposition, illocutionary act, context of utterance, circumstance, success, truth, satisfaction, necessity, consistency, analyticity and entailment. Such transcendent features are constitutive of every possible use and interpretation of a language. Their study is important for the purposes of those sciences which are concerned with language, action and thought. I will now briefly explain the nature of some of these universals from the point of view of speech act theory.

Ontological universals of speech act theory

The formal ontology of illocutionary logic is *realist* and not nominalist. For the contents of elementary illocutionary acts are *propositions* which are abstract *senses*. As Searle and I pointed out, there is no way to elaborate an adequate theory of success and satisfaction without identifying their contents with propositions. So forces, senses and denotations are the three basic components of sentence meaning in speech act theory. As Frege pointed out, these three components are logically related. Firstly, *there is a relation of correspondence between senses and denotations*; denotations of certain types correspond to senses in possible circumstances. Thus propositions, which are senses of sentences, are either true or false in each circumstance. Properties of individual objects, which are senses of unary predicates have sets of individuals as denotations: they are possessed by a certain number of individuals in each circumstance. Concepts of individual objects, which are senses of referring expressions, have single individuals as denotations: they apply to at most one individual in each circumstance.²⁵ Secondly, *propositional contents are always expressed with an illocutionary force in language use and comprehension*. In the deep structure of language, the proposition which is the sense of an elementary sentence in a context of utterance is also the content of the elementary illocutionary act that the speaker of that context would mean to perform if he were using that single sentence literally. So the proposition which is the sense of the declarative and imperative sentences “You will help me” and “Please, help me!” in a context of utterance is the propositional content of the assertion and request expressed by these sentences in that context. Elementary sentences of all types express propositions according to speech act theory.²⁶

In the theory of types of illocutionary logic, the universe of discourse is stratified as follows:

1. There are three primitive types of denotations: the type e of *individuals*, the type t of *truth values* and the type s of *success values*. Individuals are particular objects like material bodies and persons existing in actual or possible courses of the world. They are objects of reference of the simplest logical kind. The two truth values are *truth* and *falsity* and the two success values *success* and *insuccess*.²⁷ The primitive types of senses are the type c of *concepts of individuals* and the type r of *attributes of individuals*. *Properties of individuals* and, for each number $n \geq 2$, *relations of degree n between individuals* are attributes of individuals.
2. As in intensional logic, for any pair of types α and β of entities which exist in the universe of discourse, there is the derived type $(\alpha\beta)$ of *functions* from the set of all entities of type α into the set of all entities of type β . Thus (tt) is the type of unary truth functions and $t(tt)$ that of binary truth functions. (et) is the type of (characteristic function of) sets of individuals and $e(et)$ that of sets of pairs of individuals.
3. Each type is a *subtype of more general types*. Thus concepts and attributes of individuals have the more general type of *propositional constituents*.²⁸ For any pair of types α and β , there is the derived type $\alpha \cup \beta$ of all entities which are of the type α or β . For example, $c \cup r$ is the type of propositional constituents of first order propositions.
4. Finally, for any type α of entities, there is the derived type $\#\alpha$ of *intensions* whose extensions are entities of type α .²⁹ An intension of type $\#\alpha$ is a function from the set of all possible circumstances into the set of entities of type α . For example, Carnapian truth conditions are intensions of type $\#t$: they are functions which associate with any possible circumstance one truth value.

All types of senses and denotations of the universe of discourse can be obtained from the few primitive types named above by applying the three operations on types that I have defined. From Carnap we know that *each sense to which correspond entities of type α has a characteristic intension of type $\#\alpha$* , namely the function which associates with any possible circumstance the entity which is the denotation of that sense in that circumstance. So any proposition has its characteristic Carnapian truth conditions which associate with each possible circumstance the true if and only if that proposition is true in that circumstance. Unfortunately traditional intensional logic has tended to identify senses with their characteristic intensions. So propositions are reduced to truth conditions: their type p is $\#t$ in the modal logic of Carnap, Montague, Kaplan, Kripke, Belnap and many others. In this view, *strictly equivalent* propositions, which are true in the same possible circumstances, are identified. However, it is clear that most strictly

equivalent propositions do not have the same cognitive values. In particular they are not substitutable *salva felicitate* within the scope of illocutionary forces. For example, one can assert that Paris is a city without asserting that it is a city and that bachelors are unmarried, even if these two assertions are true under the same conditions. Illocutionary logic requires therefore a finer propositional logic. Just as the same denotation can correspond to different senses, the same intension can be common to different senses in the deep structure of language.

In order to seriously take into account the fact that propositions are always expressed in the attempted performance of illocutionary acts, I have advocated in *Meaning and Speech Acts* and other papers³⁰ a *natural predicative logic of propositions*. My main idea was to explicate the logical type of propositions by mainly taking into consideration the acts of predication that we make in expressing and understanding propositions. It is based on the following principles:

Propositional constituents are senses and not denotations.

As Frege (1892) pointed out, we cannot refer to objects without subsuming them under senses and without predicating of them attributes. Thus referential and predicative expressions of sentences have a sense in addition to a possible denotation in each context. When we speak literally, we express the attributes and concepts which are the senses of the referential and predicative expressions that we utter. Moreover we refer to the objects which fall under these concepts in the context of utterance. Frege's argument against direct reference remains valid if propositions are contents of thought. Otherwise, we would be totally inconsistent. We can make mistakes and assert, for example, that Tullus is not Cicero. But we never intend to make the absurd assertion that Tullus is not Tullus.

Propositions have a structure of constituents.

Understanding a proposition consists mainly in understanding which attributes objects of reference must possess in the world in order that this proposition be true. In speaking, we always predicate in a certain order attributes of our objects of reference. Each expressed proposition is then composed out of atomic propositions corresponding to acts of predication. For example, the proposition that the pope is Polish is composed of a single atomic proposition which predicates of the pope the property of being Polish. That atomic proposition is of the type $a = (c \cup x)t((\#t)t)$. Its propositional constituents are the property of being Polish and the concept of being the pope. Its characteristic truth condition is the function which associates the true with all and only the possible circumstances where the individual who is pope is Polish.

An adequate explication of truth conditions of propositions must take into account the effective way in which we understand such conditions.

To understand the truth conditions of a given proposition is not to know its actual truth value in each possible circumstance. It is rather to understand that it is true according to some possible truth conditions of its atomic propositions and false according to all others. We understand the proposition that whales are fishes without knowing *eo ipso* that it is necessarily false. We discovered in the course of history that whales are mammals. We often express senses without knowing their denotation in the context of utterance. From a logical and cognitive point of view, atomic propositions have a lot of *possible truth conditions*: they could be true in all circumstances, they could be false in all circumstances, they could be false in one circumstance and true in all others, and so on. Among all possible truth conditions that each atomic proposition could have, there are of course its *actual Carnapian truth conditions* which gives as value the true in all circumstances where the objects which fall under its concepts satisfy its attribute.

We most often ignore actual truth conditions. But we always distinguish, when we express a proposition, the possible truth conditions of its atomic propositions which are compatible with its truth in a possible circumstance, from those which are not. In making such a distinction our mind draws a kind of truth table. Thus we know that the truth of an elementary proposition in a circumstance is compatible by definition with all and only the possible truth conditions of its unique atomic proposition under which it is true in that very circumstance. We know that the truth of a propositional negation $\neg P$ in a circumstance is compatible with all and only the possible truth conditions of its atomic propositions which are incompatible with the truth of P in that circumstance. And that the truth of the modal proposition that it is universally necessary that P is compatible with all and only the possible truth conditions of its atomic propositions which are compatible with the truth of P in every circumstance. So the type of truth conditions of complete propositions is $\#((a(\#t))t)$ in illocutionary logic.

There are two limit cases of truth conditions. Sometimes the truth of a proposition is compatible with all possible ways in which objects could be. It is a tautology. Sometimes it is incompatible with all of them. It is a contradiction. In my approach, *tautologies* are propositions whose truth is compatible with all the possible truth conditions of their atomic propositions. And *contradictions* are propositions whose truth is compatible with none.

The set of propositions is recursive.

Elementary propositions are the simplest propositions. They contain a single atomic proposition and are true in all circumstances where that atomic proposition is true. *All other propositions are more complex: they are obtained by applying to simpler propositions operations which change atomic propositions or truth conditions.* Truth functions are the simplest propositional operations: they only rearrange truth conditions. Thus the conjunction $P \wedge Q$

and the disjunction $P \vee Q$ of two propositions have all and only the atomic propositions of their arguments P and Q . They only differ by their truth conditions.³¹ Unlike truth functions, quantification and modal, temporal and agentive operations on propositions change constituent atomic propositions as well as truth conditions. Thus, when we say that it is necessary that God does not make mistakes, we do not only predicate of God the property of not making mistakes. We also predicate of Him the modal property of infallibility, namely that He does not make mistakes in any possible circumstance.

Identical propositions are composed of the same atomic propositions and their truth in each circumstance is compatible with the same possible truth conditions of their atomic propositions.

Thus the type p of propositions is $(at)(\#((a(\#t))t)t)$. From a logical point of view, each proposition has a characteristic set of atomic propositions and a characteristic intension which associates with any possible circumstance the set of possible truth conditions of its atomic propositions which are compatible with its truth in that very circumstance. My criterion of propositional identity is stronger than that of modal, temporal and intensional logic. Strictly equivalent propositions composed out of different atomic propositions are no longer identified. We do not make the same predications in expressing them. Furthermore, unlike Parry³² I do not identify all strictly equivalent propositions composed of the same atomic propositions. Consider the necessarily false proposition that whales are fishes and the contradiction that whales are and are not fishes. They do not have the same cognitive value. We can believe that whales are fishes. But we could not believe that whales are and are not fishes. In my logic, such propositions are different because their truth is not compatible with the same possible truth conditions of their atomic proposition. However my criterion of propositional identity is less rigid than that of intensional isomorphism in Cresswell's hyperintensional logic³³. For all Boolean laws of idempotence, commutativity, distributivity and associativity of truth functions remain valid laws of propositional identity.

Logical universals of speech act theory

A primary purpose of speech act theory is to formulate valid laws about success, truth and satisfaction. Because all the logical constants and syncategorematic expressions of the theoretical vocabulary of illocutionary logic express transcendent features of language, these valid laws are contributions to universal grammar.

Thanks to the new explication of the logical type of proposition, speech act theory offers a new concise definition of truth by correspondence and articulates better the logical structure of propositions. In the philosophical tradition, from Aristotle to Tarski, true propositions correspond to reality. Objects of reference stand in relations in possible circumstances. Atomic propositions have therefore a well determined truth value in each circumstance

depending on the denotation of their attributes and concepts and the order of predication. However things could stand in many other relations in each circumstance. In addition to the ways in which things are, there are the possible ways in which they could be. We are not omniscient. So, as I explained above, in interpreting propositional contents of utterances we consider a lot of possible truth conditions of their atomic propositions. The truth of most propositions in most circumstances is compatible with many possible ways in which objects could be and incompatible with many others. Think about disjunctions, material implications, historic possibilities, future propositions, and so on.

However in order that a proposition be true in a given circumstance, things must be in that circumstance as that proposition represents them. Otherwise there would be no correspondence. Along these lines, *one can define as follows the concept of truth: a proposition is true in a circumstance when its truth in that circumstance is compatible with the actual truth conditions of all its atomic propositions.* Classical laws of truth theory follow from this new concise definition.

Human beings are not perfectly rational. We are often inconsistent. We can assert (and believe) propositions whose truth is impossible. Furthermore, our illocutionary commitments are not as strong as they should be from the logical point of view. Thus, we assert propositions without asserting all their logical consequences. We therefore need in the propositional logic of speech act theory a finer logical implication than C.I. Lewis' strict implication. A proposition *strictly implies* all others which are true in all possible circumstances where it is true. As we do not know how propositions are related by strict implication, we can achieve an illocutionary point on a propositional content P without achieving that point on all propositions strictly implied by P.

Given my predicative analysis of the logical form of propositions, one can define in philosophical logic a new relation of *strong implication* between propositions much finer than Lewis' strict implication. *A proposition P strongly implies another proposition Q when firstly, all the atomic propositions of Q are in P and secondly, the proposition P tautologically implies proposition Q* in the sense that all the possible truth conditions of atomic propositions of P which are compatible with the truth of proposition P in a circumstance are also compatible with the truth of proposition Q in that very circumstance. Unlike strict implication, *strong implication is cognitive.* Whenever a proposition P strongly implies another proposition Q we cannot express that proposition P without knowing *a priori* that it implies that other proposition Q. For in expressing P, we apprehend by hypothesis all atomic propositions of Q. We make all the corresponding acts of reference and predication. Furthermore, in understanding the truth conditions of proposition P, we distinguish all possible truth conditions of these atomic propositions which are compatible with its truth in any circumstance. The same possible

truth conditions of atomic propositions of Q which are in P are then by hypothesis compatible with the truth of proposition Q in the same circumstance. Thus, in expressing P, we know that Q follows from P.

As I pointed out, *strong implication obeys a series of important universal laws*. Unlike strict implication, strong implication is anti-symmetrical. Two propositions which strongly imply each other are identical. Unlike Parry's analytic implication, strong implication is always tautological. Natural deduction rules of elimination and introduction generate strong implication when and only when all atomic propositions of the conclusion belong to the premises. So a conjunction $P \wedge Q$ strongly implies each conjunct P and Q. But a proposition P does not strongly imply any disjunction of the form $P \vee Q$. Strong implication is *paraconsistent*. A contradiction does not strongly imply all propositions. Tautologies (and contradictions) are special kinds of necessarily true (and false) propositions. Unlike other necessarily true (and necessarily false) propositions, we know *a priori* that tautologies are true (and contradictions false). Finally, strong implication is *finite* and *decidable*.

In the theory of success and satisfaction, there are a few basic universal laws governing directions of fit of utterances which both fix limits and impose a logical order to the different possible ways in which we can use language in order to relate propositions to the world in the successful performance of an illocutionary act. According to speech act theory, language is the work of reason. In particular, rationality is built into the very use of language. As I said earlier, speakers are not perfectly rational in the use of language. However, they are always at least *minimally rational* in their performance and understanding of illocutionary acts. First, they are minimally consistent. *They do not attempt to perform elementary illocutionary acts with a non empty direction of fit that they know a priori to be unsatisfiable.* So they do not make assertions that they know *a priori* to be false by virtue of competence. In particular, they never assert contradictions. For they know *a priori*, when they understand a contradiction, that its truth is incompatible with all possible truth conditions of its atomic propositions. Similarly, they do not make promises that they know *a priori* to be impossible to keep and they do not give orders to which they know *a priori* no one could obey. So whenever they utter a declarative, imperative or performative sentence whose clause expresses a contradiction, they do not mean what they say. Furthermore, whenever speakers know *a priori* by virtue of competence that an illocutionary act F(P) could not be satisfied unless another act F(Q) with the same force is, they cannot mean to perform that act F(P) without attempting the second F(Q). Illocutionary commitment is partially compatible with strong implication. In particular speakers cannot assert a proposition without asserting all the propositions that that proposition strongly implies. It would not be rational for speakers to act differently.

Most fundamental laws governing illocutionary points are related to

rationality. Thus a limit of thought shows itself in the law of the contingent *a posteriori* truth of the propositional content of any satisfied illocution with the world-to-words direction of fit. It is clear that the world could not be transformed to match the propositional content of an utterance if that content were necessarily true independent of any action. So performative and imperative sentences whose clause expresses a tautology, e.g. "I request or do not request you to come" and "Please, come or do not come!" are illocutionarily inconsistent. Speakers know by virtue of linguistic competence that literal utterances of such sentences would be pointless.

There is also a transcendent logical order which is imposed by direction of fit on possible illocutionary acts in all languages. On the one hand, declarations, which have the double direction of fit, are for that reason the strongest type of illocutionary act. Their successful performance is sufficient to make their propositional content true in the world and to achieve success of fit between words and things. Thus any type of illocutionary act can be performed by way of a declaration in a performative utterance. But, no other type of illocutionary act strongly commits the speaker to a declaration. Because declarations are the strongest type of illocutionary act, it is a mistake to consider them as paradigmatic speech acts, just as it is a mistake to consider performative sentences as paradigmatic forms of expression for speech acts. Only declarations have the double direction of fit. On the other hand, expressives, which have the null direction of fit, are for that reason the weakest type of illocutionary act. Any speech act has sincerity conditions. Thus, every successful performance of a speech act is an expression of mental states. Consequently, any type of illocutionary act strongly commits the speaker to an expressive. But the expressive type of speech act does not commit the speaker to any other. Just as it was a mistake for Austin to consider declarations as paradigmatic speech acts, so it is a similar mistake for Bach and Harnish³⁴ and for Cohen and Levesque³⁵ to consider expressive illocutions as paradigmatic speech acts. There is more to a speech act with a non empty direction of fit than just expressing sincerity conditions. For example, in giving an order we do more than express our will. We first of all make an attempt to get the hearer to act and we moreover invoke a position of authority or power over him or her.

As I said earlier, the recursive definition of the set of all truth functions describes transcendent features in the determination of truth conditions of propositions. So all the logical forms of tautologies and contradictions are universal. And propositions of certain logical forms strongly imply propositions of other forms in every possible natural language. Similarly, *the recursive definition of the set of all possible illocutionary forces of utterances also describes transcendent features of language use.* In particular, *there are five primitive illocutionary forces in every possible natural language.* These are the simplest possible illocutionary forces : they have an illocutionary point, no

special mode of achievement of that point, a neutral degree of strength and only the propositional content, preparatory and sincerity conditions which are determined by their point. *The five primitive forces are* : (1) the *illocutionary force of assertion* which is named by the performative verb "assert" and realized syntactically in the declarative sentential type; (2) the *primitive commissive illocutionary force* which is named by the performative verb "commit"; (3) the *primitive directive force* which is realized syntactically in the imperative sentential type; (4) the *illocutionary force of declaration* which is named by the performative verb "declare" and expressed in performative utterances; and finally (5) the *primitive expressive illocutionary force* which is realized syntactically in the type of exclamatory sentences. Moreover, *all other illocutionary forces can be obtained by applying five simple Boolean or Abelian operations which consist in adding new components or in changing the degree of strength*. For example, the illocutionary force of a promise is obtained from the primitive commissive force by imposing a special mode of achievement of its point involving the undertaking of an obligation. The illocutionary force of renunciation has the additional propositional content condition to the effect that it is a negative commitment. To renounce to do something is to commit oneself not to do it anymore.³⁶

As one can expect, one can make a systematic analysis of first level illocutionary verbs of all natural languages on the basis of the recursive definition of the set of possible forces.³⁷ The same holds for force markers. Some syntactic types of sentence e.g. the declarative, imperative and exclamatory types express primitive forces. Others, like the conditional and interrogative types, express derived forces. Thus interrogative sentences are used to ask questions which are requests (with a polite mode of achievement of the directive point) that the hearer gives an answer (special propositional content condition). So any interrogative sentence e.g. "Is it snowing?" is synonymous with a corresponding imperative sentence e.g. "Please, tell me whether or not it is snowing"

As Searle and I pointed out, one can define the conditions of success of elementary illocutionary acts from the components of their illocutionary force and of their propositional content. An illocutionary act of the form F (P) is *successfully performed* in the context of an utterance when, firstly in that context, *the speaker succeeds in achieving the illocutionary point* of force F on proposition P *with the mode of achievement* of F, and P *satisfies the propositional content conditions* of F, secondly *the speaker succeeds in presupposing* the propositions determined by *the preparatory conditions* of F and finally *he also succeeds in expressing with the degree of strength of F* the mental states of the modes determined by the *sincerity conditions* of F about the fact represented by the propositional content P. Thus a speaker makes a promise in a context of utterance when the point of his utterance is to commit himself to doing an act A (illocutionary point), so as to put himself under an obligation to do that

act (mode of achievement), the propositional content of the utterance is that the speaker will do act A (propositional content conditions), the speaker presupposes that he is capable of doing that act and that it is in the interest of the hearer (preparatory conditions) and finally he expresses a strong intention to accomplish such an act (sincerity conditions and degree of strength). A speaker can make false presuppositions. He can also express attitudes which he does not have. Consequently, successful performances of illocutionary acts may be *defective*. A speaker can mistakenly make a promise that is not beneficial at all to the hearer. He can also make an insincere promise that he does not intend to keep. In such cases, the performed illocution is defective. From a logical point of view, an illocutionary act is *non defectively performed* in a context of utterance when it is successfully performed and its preparatory and sincerity conditions are fulfilled in that context.

Given the general definition of success, *a few universal laws of strong illocutionary commitment are valid for illocutionary forces* in all natural languages. Whenever a new illocutionary force F' is obtained by the application of an operation on a force F, that new force F' is always either stronger or weaker than the argument force F. A force F is *stronger than* another force F' when it is not possible to perform an illocution of the form F(P) without *eo ipso* performing an illocution of the form F'(P). Thus, any illocutionary force whose degree of strength is positive is stronger than the primitive force with the same illocutionary point. One cannot promise, renounce or pledge something without committing oneself to a future action.³⁸

Semantic universals of language use

As it is part of the linguistic meaning of every sentence that it express a certain illocutionary act in any possible context of use, there is a general ramification of the fundamental semantic notions of analyticity, consistency and entailment as well as a recursive definition of a successful and of a satisfied utterance in the formal semantics that I advocate for ordinary language. First, one must distinguish in semantics the two notions of illocutionary and truth conditional consistency in language. *Certain sentences* like “Whales are fishes” are *illocutionarily consistent in the sense that they express a performable illocutionary act. Others are truth conditionally consistent: they express a satisfiable illocutionary act.* Second, one must also distinguish the notions of illocutionary and truth conditional analyticity. *Some sentences* e.g. Moore’s paradoxical sentence “It is snowing and I do not believe it” are *analytically unsuccessful: they can never be used literally with success. Others* such as “I do not exist” are *analytically unsatisfied: they can never be used literally with satisfaction.* Such semantic notions do not have the same extension. Thus the sentence “Whales are fishes” is illocutionarily consistent but truth conditionally inconsistent. Utterances of Moore’s paradoxical sentence are not analytically unsatisfied. And that sentence is analytically unsuccessful but not illocutionarily

inconsistent.

Just as the successful performance (or satisfaction) of certain illocutionary acts implies the successful performance (or satisfaction) of others, *certain sentences entail illocutionarily (or truth conditionally) other sentences*. For example, the performative sentence “I request your help” illocutionarily entails the imperative “Please, help me!” : it is not possible to make a successful utterance of that performative sentence without making the request expressed by the imperative sentence in the context of that utterance. Moreover, that imperative sentence “Please, help me!” truth conditionally entails the declarative sentence “You can help me”: a speaker cannot grant the request that that sentence expresses in a context unless the assertion expressed by the declarative sentence is true in that very context.

Thus the semantic analysis of the sentential forms of expression for illocutionary acts in natural language serves to logically distinguish different classes of sentences expressing different kinds of illocutionary acts. *There are universal laws of illocutionary and of truth conditional inconsistency for sentences*, just as there are universal laws of non performability and unsatisfiability for illocutions. As we have seen, sentences of certain logical forms (for example, declarative, imperative and performative sentences whose clauses express a contradiction) express non performable and non satisfiable illocutionary acts in all languages. *Similarly, there are universal semantic laws of illocutionary and truth conditional entailment between sentences*, just as there are universal laws of inclusion of success and satisfaction conditions between illocutions . Thus performative sentences are the strongest type of sentences because declarations are the strongest type of illocutionary act. As I said earlier, each performative sentence illocutionarily entails the non performative sentences corresponding to it. However, only a consistent sentence which is performative can strongly entail another performative sentence. For similar reasons, exclamatory sentences are the weakest type of sentences in each language. Because any elementary illocutionary act strongly commits the speaker to expressing its sincerity conditions, sentences of all syntactic types illocutionary entail corresponding exclamatory sentences. So the declarative sentence "Alas, he is dead" illocutionarily entails the exclamatory sentence "How sad that he is dead!" But no consistent exclamatory sentence illocutionarily entails a sentence of a non expressive type.

Thanks to illocutionary logic, formal semantics can now state new kinds of necessary and universal laws of entailment that hold between sentences of all types by virtue of the logical forms of the illocutionary acts which they express. Moreover, it can also explain and derive principles of theoretical and practical inferences which are valid.³⁹ In the terminology of speech act theory, an inference is *valid* whenever it is not possible for its premises to express illocutionary acts with certain success or satisfaction values unless its conclusion also expresses an

illocutionary act with the same or other success or satisfaction values. Some inferences are *practical*: their conclusion expresses an illocution with the things-to-words direction of fit. Other inferences are *theoretical*: their conclusion expresses an illocution with the words-to-things direction of fit. Until now, contemporary logic and formal semantics have been confined to the study of *valid forms of theoretical inferences* whose premises cannot be true unless their conclusion is also true. However, it is quite clear that we are not able to make all such valid theoretical inferences by virtue of linguistic competence, for we understand propositions without knowing all their logical consequences. We have to learn mathematics in order to make some of these valid inferences. *Furthermore, there are four other kinds of valid inference relative to success and satisfaction conditions.* A first kind of valid inferences have premises which cannot be successful (that is to say express successful illocutions) unless their conclusion is also successful. The conjunction of premises of such inferences illocutionarily entail their conclusion. A second kind of valid inferences have premises which cannot be satisfied unless their conclusion is also satisfied. The conjunction of premises of these inferences truth conditionally entail their conclusion. The third kind of valid inferences have premises which cannot be successful unless their conclusion is satisfied. And the fourth kind is the converse of the third kind. All these kinds of valid inferences exist and do not coincide in extension.

From the point of view of universal grammar, the most interesting principles of valid inferences are those that speakers always internalize in learning their mother tongue, for they reflect the very nature of human reason and constitute the decidable innate natural logic of linguistic competence. The logical semantics of speech act theory is able to formulate such innate principles. For example, it can predict and explain why we are all able to infer from the premise “Please, give me a glass of red or white wine!” the conclusion “Please, give me a glass of wine!”. Why are we all able to make such a valid practical inference in language use and comprehension? We know by virtue of our competence that a speaker could not make the request expressed by the premise without making that expressed by the conclusion. And that a hearer could not grant the first request without also granting the second. For the propositional content of the premise strongly implies that of the conclusion.

An important discovery of speech act theory is that *semantic paradoxes like the liar paradox do not really occur in the use of language.* As Greek philosophers pointed out, natural languages contain paradoxical sentences like “This assertion is false” and, let me add, “I will not keep this promise”, “Disobey this order”, etc. Self referential utterances of such sentences seem to be satisfied if and only if they are unsatisfied. Unlike Russell, Tarski and many others, I do not think that natural languages are inconsistent because they contain such paradoxical sentences. It is unnecessary to prevent the formation of such

sentences in formal object languages of logic and philosophy in order to avoid inconsistency. When the logical forms of their force marker and clause are well analyzed, it appears that self referential utterances of these so called paradoxical sentences could not be satisfied unless they were also successful. But the illocutionary acts that they express are not performable given the law of minimal consistency of speakers stated above. So sentences expressing such paradoxes are both illocutionarily and truth conditionally inconsistent. As Prior⁴⁰ anticipated in his discussion of belief, the liar's paradox is of the form "There exists a proposition P such that I assert P and P is not true and P is that very proposition, namely that there is a proposition P such that I assert P and P is not true" Whenever the liar's paradox is so analyzed, it turns out to be a false assertion that no minimally rational speaker could ever attempt to make. For its propositional content, whenever it is properly understood, turns out to be a pure contradiction. It is therefore a mistake to exclude self reference from universal grammar because of the liar paradox. Firstly, this is unnecessary because there is no real paradox of this kind. Secondly, this restricts far too much the expressive capacities of ideography. There are a lot of interesting self referential sentences, e.g. "This utterance is an assertion", "I am now thinking in uttering these words, therefore I exist"⁴¹ whose utterances are both analytically successful and true. Moreover, certain types of illocutionary acts such as declarations are by nature self referential. As Austin pointed out, explicit performative utterances in English contain the adverb "hereby"; they are clearly self referential.

Pragmatic universals of performance

A semantic theory of natural language is exclusively concerned with literal meaning. However, *in ordinary conversations, the speaker often means something else or more than what he says. Firstly, the primary illocutionary act of the utterance is different from the literal speech act in the cases of metaphor, irony and indirect speech acts. Secondly, the speaker often means to perform secondary non literal illocutionary acts such as conversational implicatures.* Thus a speaker can indirectly offer help by way of asking the question "Can I help you?" He can imply conversationally that he does not know exactly where Paul is by saying "Paul is in Paris or Rome" The hearer's capacity to understand what the speaker means is part of his linguistic competence and it exceeds the capacity of understanding the sentence meaning. Anything that a speaker means he or she can in principle say because of the principle of expressibility. However the converse is not true. It follows from the principle of minimal rationality that we cannot mean everything that we can say. Sentences whose utterances are analytically successful cannot be used literally. Speakers who say "I am not identical with myself today" either do not understand what they say or they mean something else, for example. "I am not today as I use to be". Furthermore, as Wittgenstein pointed out in his *Philosophical Investigations*, language use and meaning are related to social forms of life. Old meanings and uses can disappear

just as old forms of life can become obsolete. And new meanings and uses can appear with emerging forms of life. Natural languages evolve like human communities. Speakers can change forms of linguistic use and expressive capacities of their language. Often a recurrent non literal use of existing words in a recurrent background is at the origin of a new meaning.

The basic units of discourse are illocutionary acts that speakers really mean to perform, no matter whether they are literal or not. Hence the importance of a pragmatic theory of language capable of interpreting non literal utterances in semiotics. *The proper task of Pragmatics, as I conceive of it*⁴², is to explain our capacity to perform and understand non literal illocutionary acts. Until the present, there has been little progress in the development of such theoretical pragmatics. Grice⁴³ later joined by Searle⁴⁴, Bach and Harnish⁴⁵, Recanati⁴⁶ and others made important remarks on non literal speech acts by exploring the idea that language use is governed by *conversational maxims*⁴⁷ like the maxims of quality: "Speak the truth!", "Be sincere!" and of quantity: "Be as informative as required (for the purposes of the exchange)" But their analyses of speaker meaning are informal, partial and lack precise theoretical content. Moreover they only apply to assertive utterances.

According to Grice, hearers understand non literal utterances by making inferences on the basis that speakers respect conversational maxims. Searle and I have reformulated as follows Grice's deductive approach within speech act theory: A speaker who means to perform non literal speech acts intends that the hearer understand him by relying : firstly on the hearer's knowledge of the meaning of the used sentence and on his ability to understand the success and satisfaction conditions of the literal illocutionary act; secondly on their mutual knowledge of certain facts of the conversational background; and thirdly on the hearer's capacity to make inferences on the basis of the hypothesis of the respect of conversational maxims. In this view, it is not possible to understand the primary non literal illocutionary act of an utterance without having first identified the literal speech act and without having also understood that this literal act cannot be primary if the speaker respects the conversational maxims in the context of his utterance. *Thus, in my conception of semiotics, pragmatics, conceived as the theory of speaker's meaning, incorporates semantics, conceived as the theory of sentence meaning, as well as a theory of conversational maxims and an analysis of aspects of the conversational background of utterances.*

Two important conversational maxims that speakers respect in their use of language are the maxims of quality and of quantity. Using speech act theory, these conversational maxims can be formulated simply as follows :

The maxim of quality

From a logical point of view, an illocutionary act is of *perfect quality* when it is entirely *felicitous* in Austin's sense, that is to say *successful, non defective and satisfied*. Thus, the maxim of quality turns out to be a general principle of

illocutionary logic: *Let the illocutionary act that you mean to perform be felicitous in the context of your utterance!* There is an inductive definition of the conditions of felicity in illocutionary logic. So the new principle is both an explication and a generalization of the maxim of quality. The new maxim holds for all types of utterances and not just for assertive utterances. Thus there is the following *sub-maxim of quality for commands* : Let your command be a successful attempt to get the hearer to do something! Let it be a command that you want him to obey, that you have the authority to give and that he will eventually obey! Similarly, there is the following *sub-maxim of quality for assertions* : Let your assertion represent how things are in the world. Let it be an assertion supported by evidence, sincere and true! On this account, Grice's formulation of the maxim of quality is just the particular case for assertions.

The maxim of quantity

Each illocutionary act is a natural kind of use of language which can serve to achieve linguistic purposes in the course of conversations. From a logical point of view, an illocutionary act is of *perfect quantity* in a context of utterance when it is *as strong as required* (neither too strong nor too weak) to achieve the current linguistic purposes of the speaker in that context. Given their logical forms, certain illocutionary acts are *stronger* than others, in the sense that they have more felicity conditions. For example, a supplication to a hearer that he be merciful is stronger than a simple request of kindness. Stronger speech acts serve to achieve stronger linguistic purposes. Thus a speaker who would like to supplicate the hearer to be merciful but who simply requested that he be kind, would perform a speech act too weak to achieve his linguistic purpose. On the basis of these considerations, the maxim of quantity turns out to be: *Let the illocutionary act that you mean to perform be as strong as required (neither too strong nor too weak)!* This explication of the maxim of quantity holds for all types of meaningful utterances. Thus there is the special *sub-maxim of quantity for directives*: "Let your directive be as strong as required!" As one might expect, Grice's formulation of the maxim of quantity is just the special case for assertive utterances which aim to be informative.

The maxim of quantity imposes conditions on the force as well as on the propositional content of attempted illocutionary acts. Thus your directive should not be too strong. If you just want to ask someone for a glass of cognac, do not implore him (your directive force would be stronger than needed). And do not ask for more than what you want. (Do not ask for a whole bottle if you just want a glass). On the other hand, your directive should not be too weak. If you want to invoke your position of authority over the hearer, do not only tell him to do it (your directive force would be too weak), but give him a command. Furthermore, if you want him to give you armagnac, do not only command him to give you cognac (you would not be accurate enough).

There is a universal law of respect of conversational maxims in meaning

and understanding. Why do speakers and hearers have to respect as much as possible conversational maxims in their performance and understanding of speech acts?⁴⁸ In particular, why isn't it possible to violate ostensibly the maxim of quality in a conversation (for example, to say something which is known to be obviously false) without exploiting that maxim (that is to say without meaning something else which is compatible with the background) ? Indeed the primary non literal speech act of the utterance is not in conflict with the background. *Like Grice and Kasher*⁴⁹, *I think that the universal respect of conversational maxims is a consequence of the hypothesis that a competent speaker is a rational agent.* This is quite obvious for the two maxims of quality and quantity which concern the very logical form of illocutionary acts. By nature, an illocutionary act is a means of achieving linguistic purposes in conversation. According to practical reason, a rational agent should not use means under conditions where he knows that they will not be effective. Similarly, a rational speaker should not attempt to perform an illocutionary act in a context of utterance where he knows that he will fail, be defective or unsatisfied. Moreover, a rational agent should respect a principle of the effective means in his selection of attempted illocutionary acts. From a logical point of view, there corresponds to each possible linguistic purpose a unique illocutionary act which serves fully and most effectively that purpose. Thus, a speaker who would ostensibly attempt to perform a weaker or stronger illocutionary act in a context where he has that purpose would not act most effectively to attain his ends. So it is reasonable to respect the conversational maxim of quantity.

Grice did not attempt to formally analyze the nature of inferences that hearers make in order to understand non literal utterances. However one can reformulate and attempt to formalize his inferential approach within speech act theory. *In my view, there are two main ways in which a speaker can get the hearer to infer what he means on the basis of the assumption that he respects the conversational maxims. These two ways are the exploitation and use of a maxim.*

The exploitation of a maxim

My notion of exploitation of a maxim is related to Grice's notion. But it is more general. A speaker *exploits a conversational maxim* when he wants to attract the hearer's attention to certain facts of the conversational background with the intention that the hearer recognize the following data: Firstly, the speaker would not respect that conversational maxim if the primary illocutionary act were the literal speech act; but he is able to respect the maxim without violating another maxim (there is no clash). Moreover, he wants to cooperate and to continue the conversation; so he intends to perform non literally another primary illocutionary act. And finally, the speaker also intends that the hearer know that they both have mutual knowledge of all this.

So in the case of an *exploitation of the maxim of quality*, the speaker intends that the hearer recognize that there are in the background facts

incompatible with felicity conditions of the literal speech act. Moreover he also wants that the recognition of his intention be part of mutual background knowledge. Whenever the hearer recognizes this, he understands that the speaker does not mean to perform the literal illocutionary act but another primary illocutionary act having felicity conditions different from those which are violated in the background. Furthermore, the hearer identifies these other non literal conditions by drawing them from facts of the conversational background that the speaker intends him to recognize. Suppose that someone tells you "I promise that you will regret this" in a background where he wants you to know that he will react by doing something bad for you. That speaker would be exploiting the maxim of quality. His utterance is not a promise. For he obviously does not presuppose that he will do something good for you, the hearer (preparatory condition of a promise). On the contrary, he presupposes the opposite of this literal preparatory condition. In such a situation, you should understand that the speaker means to threaten you ironically. His non literal threat only differs from the literal promise by virtue of the fact that it has the opposite preparatory condition that the represented action is bad for the hearer. In a case of exploitation, there is only an apparent violation of the maxim at the level of the literal speech act. The primary illocutionary act is compatible with the background.

In the case of *exploitation of the maxim of quantity*, the speaker intends that the hearer recognize that the literal speech act is not as strong as required to achieve his current linguistic purposes in the context of utterance. Thus a speaker who tells you "Your work is not bad!" exploits the maxim of quantity to make an *understatement* when it is part of background knowledge that everybody is very impressed by what you have done. In such a context, you should understand that the speaker means to make indirectly a stronger assertion than the literal one, namely that your work is very good.

The use of a maxim

A speaker *uses a conversational maxim* when certain facts of the conversational background are such that he intends the hearer to recognize that he would not respect that maxim in performing the primary speech act if he were not also performing a secondary non literal illocutionary act. Moreover he also intends that the hearer know that they both mutually know all this. So the speaker means then to perform that secondary non literal illocutionary act.

Whenever a speaker uses the maxim of quality, he intends the hearer to make an inference on the basis of the hypothesis that his primary illocutionary act is felicitous. Suppose that the information that gay men do not have girlfriends is part of background knowledge and that someone to whom you have asked "Does Jones have a girlfriend?" answers by saying "He is gay" meaning what he says. In that situation he would use the maxim of quality in order to imply conversationally that Jones has no girlfriend. On the other hand, whenever a

speaker uses the maxim of quantity, he intends that the hearer make an inference on the basis of the hypothesis that his primary illocutionary act is as strong as required to achieve his current linguistic purposes. Usually the conversational background is such that other stronger relevant speech acts could have been performed at that moment in the conversation. In such a situation the hearer comes to the conclusion that the speaker means to denegate one of these stronger illocutionary acts or to implicate conversationally that, given the background, they would not be felicitous in that context. Suppose someone to whom you have requested help answers "I will try" instead of "I promise to help you". He could use the sub-maxim of quantity "Commit yourself as strongly as you want!" in order to imply conversationally that he does not want to make a promise. This would oblige him too much.

As Grice pointed out, non literal illocutionary acts performed in language use have two important properties. First, they are in general *contextually cancellable*, in the sense that there are other possible contexts of utterance (with different backgrounds) where the same speaker could use the same sentence without having the intention of performing any non literal speech act. Moreover, non literal speech acts are also in general *not detachable*: if the speaker had used another sentence expressing the same literal illocutionary act in the same conversational background, he would also have meant to perform them. From a theoretical point of view, these two properties of non literal speech acts are important. First, if non literal illocutions are cancellable, certain conditions must be necessary in order that a speaker who uses a sentence in a conversational background can mean something else than what he says. When such conditions are not fulfilled, the speaker's meaning can only be literal. Second, if non literal speech acts are not detachable, certain conditions relative to the form of the literal speech act and the conversational background must be sufficient in order that speaker meaning be different from sentence meaning. When these conditions are fulfilled in the conversational background, the speaker's meaning could not be entirely literal in the context of an utterance. Part of the task of pragmatics is to state these necessary and sufficient conditions for non literal speaker meaning.

On the basis of preceding considerations, I have made the following conjecture in pragmatics: First, *a speaker means to perform a primary non literal speech act when he exploits conversational maxims and second he implies conversationally that he performs a secondary non literal illocution when he uses such maxims in the context of his utterance*. I have also explicated the logical form of certain important figures of non literal meaning such as irony, conversational implicatures and indirect speech acts.

Irony is an extreme case of exploitation of the maxim of quality. An ironic speaker relies on facts of the conversational background which are incompatible with the literal illocutionary act. In the case of irony, it is not only part of mutual knowledge background that certain literal felicity conditions are

violated, but also that the speaker intends to perform a non literal illocutionary act with opposite conditions. The speaker's irony is in general directed to the components of the force and propositional content of the literal illocutionary act which determine blatantly violated felicity conditions. So in the case of elementary utterances, the ironic illocutionary act only differs from the literal speech act by the fact that it has the opposites of these components whenever such components exist and the act is performable. Otherwise, the ironic illocutionary act is just the denegation of the literal speech act. Such an analysis of irony explains why and how *in the case of irony the speaker's meaning is always in opposition to the meaning of the sentence that is used*. It also accounts both for irony as to the illocutionary force and irony as to the propositional content of the literal speech act. (Most analysts have neglected until now the first kind of irony.) The speaker can be ironical as to the illocutionary point (he can ironically refuse in saying "I agree"), as to the mode of achievement (he can ironically command in saying "Please", as to the preparatory condition (he can ironically threaten in saying "I promise"), as to the sincerity condition (he can ironically disapprove in saying "I approve") and as to the propositional content (he can ironically assert the opposite of what he says).

So called *indirect speech acts are cases of exploitation of the maxim of quantity*. A speaker means to perform indirectly a speech act by way of performing the literal illocutionary act when he exploits the maxim of quantity by intending to draw the hearer's attention to the fact that certain non literal conditions of non defective performance are fulfilled in the conversational background. In such contexts, the speaker intends that the hearer recognize that the literal illocutionary act is not strong enough to achieve all his current linguistic purposes. The speaker respects the maxim of quantity in attempting to perform indirectly another illocutionary act. For that indirect speech act serves to achieve all his other non literal purposes. In the simplest cases of exploitation of the maxim of quantity, all the non literal conditions of non defective performance which hold in the background are relative to the literal propositional content. In such cases, the indirect and literal speech acts have the same propositional content. So the speaker's indirection is only directed to the illocutionary force. Thus we can make an indirect promise by saying "I will help you" in a context where we intend that the hearer recognize that we want to commit ourselves to doing something which is good for him. When the indirect speech act has a non literal propositional content, some of its non literal felicity conditions are conditions of satisfaction of the literal speech act. The speaker can assert that these conditions obtain and exploit the maxim of quantity by relying on the fact that his literal assertion is true given the conversational background. He can also ask the hearer whether these conditions obtain and exploit the maxim of quantity by relying on the fact that his literal question has or at least could have a positive answer given the conversational background. So we can indirectly offer and

sometimes also promise help by way of saying "I could help you", "Can I help you?", "Would you like me to help you?" (preparatory conditions), "I intend to help you", "Don't you realize that I want to help you?" (sincerity conditions), "I should help you", "Should I help you?" (mode of achievement). In these idiomatic uses, the propositional content of the indirect speech act is part of the literal propositional content.

My analysis of indirect speech acts explains why and in which way *speaker meaning is always an extension of sentence meaning in the case of indirect speech acts*. Contrary to what is the case for other non literal speech acts, the speaker performs an indirect speech act by way of performing the literal speech act. Both are required to achieve all his literal and non literal purposes in the context of utterance. From a logical point of view, the primacy of the indirect speech act over the literal speech act is shown in the fact that whenever the first is felicitous the second is *eo ipso* satisfied. My analysis of indirect speech acts also accounts for all the different kinds of indirection in language use. As I have shown, the speaker's indirection can be directed to the force and to the propositional content.⁵⁰

As I have explained, *there is an effective method of decision for constructing the primary ironic and indirect illocutionary act from the literal speech act and relevant facts of the conversational background which are always in finite number.*⁵¹ In my view our capacity of performing and understanding is effective and is part of our linguistic competence. Notice that an integrated formal pragmatics of non literal illocutionary acts is needed to establish a theoretical link between synchronic and diachronic semantics. For recurrent non literal meanings in recurrent forms of life of background tend to be lexicalized or realized syntactically after a while. Thus one can conceive a *theory of meaning change* explaining how new literal meanings (for example dead metaphors) can appear in the history of language.

Cognitive universals of language use

Other transcendent features of universal grammar are cognitive. They can be abstracted from the study of mental states and cognitive capacities which are necessary and sufficient for linguistic competence. *Clearly, in order to be able to fully perform and understand illocutionary acts, competent speakers must first be able to express propositions representing facts of the world. In particular, they must be able to refer and predicate and to distinguish truth from falsehood. They must also have beliefs, intentions and desires and be able to achieve illocutionary points and discursive goals. Thus, they must distinguish the different directions of fit of utterances as well as success from failure and satisfaction from insatisfaction. They must also be able to recognize relevant contextual aspects and to make valid practical and theoretical inferences in meaning and in understanding.* It is clear that computers do not have all these mental capacities. By nature, computers, which are concrete Turing machines, are

able to perform syntactical operations on words and symbols in carrying out formal programmes. But they cannot perform semantic operations of relating words of language with things in the world. For that reason, they are not able to think, just as they cannot fully use and understand language. As Searle⁵² pointed out, computers cannot have mental attitudes. They can only *simulate* intelligence and understanding in verbal interactions with man. But such a simulation does not constitute any duplication.

Moreover, as Davidson⁵³ and Searle pointed out, any adequate semantic and pragmatic theory of meaning must take into account the fact *that our natural languages are possible human languages*: they can be learned and understood (quite rapidly) by intelligent beings whose cognitive abilities are restricted. Thus there are also cognitive universals of language use. For example, we can only perform a finite number of illocutionary acts in a possible context of utterance and we perform all such speech acts by way of performing a stronger illocutionary act which commits us to all others. *Consequently, there is a universal law of foundation for successful performance in speech act theory*. All illocutionary acts that a speaker succeeds in performing in a context are acts that he performs by way of performing a unique stronger illocutionary act that generates all others in that context. Certain logical features like strong illocutionary commitment and entailment are *innate*: we know them *a priori* in virtue of linguistic competence (but the corresponding truth conditional notions do not have the same psychological reality). *Consequently, there are universal effective methods of recognition of certain logical features*. Unlike Montague (1970) who tended to consider formal semantics and universal grammar as part of mathematics, I think like Chomsky (1975) that philosophy and psychology have to play an important role in the development of universal grammar. Even from the formal point of view, we need a very constructive theory of meaning and understanding that accounts for the creative and effective mental abilities of competent speakers as well as their cognitive limitations.

Therefore investigations on linguistic universals in performance are in many ways interdisciplinary. Speech act theory has to use the resources of various sciences dealing with communication and action in order to study these universals. Not only logic and the philosophy of language, of action and of mind are needed but also linguistics, anthropology, cognitive science, psychology and computer science. Consequently, there are various ways to confirm the material and formal adequacy of the universal claims of speech act theory. Some of the claims require an *empirical confirmation* from the observation of linguistic or psychological data. For example, in order to confirm that there are only six different components of illocutionary force, it is most useful to analyse the formal structure of the set of force markers and performatives in many typologically different languages. In order to confirm the minimal rationality of competent speakers in the use of language, it is also necessary to check empirically by

psychological methods the actual reasoning of speakers in their conduct of real conversations. Moreover, various universal claims require a *logical proof*. For example, in order to confirm that the language generated and interpreted by an advocated universal grammar is human, it is necessary to demonstrate the recursivity of its definition of linguistic and speaker meaning as well as the decidability of what is supposed to be known in virtue of linguistic competence. In certain cases, in order to account for the rapidity of the time of comprehension, one must prove by computational methods that the time of decision of the corresponding algorithms has a minimal upper bound. Finally, because speech act theory is concerned with the a priori forms of thought, some universal claims require more than an empiric confirmation or a logical proof. They need what Kant used to call a *transcendental deduction*. Thus one must justify in a certain philosophical way the classification of illocutionary points according to which there are exactly five basic ways to use language to relate a propositional content to the world. This is why Searle and I have attempted to make a transcendental deduction of the five assertive, commissive, directive, declarative and expressive illocutionary points from the consideration of the different possible directions of fit of utterances. The same holds for the justification of discursive goals.

NOTES

¹ Following Descartes, I distinguish here *conceptual thought* from other types of thought inherent to perception and imagination whose contents are presentations rather than representations of facts. See Descartes' *Meditations*, 1641 where Descartes distinguishes in the sixth meditation the conception from the imagination of a polygon having one thousand sides. Both propositional attitudes and illocutionary acts are units of conceptual thought.

² The term of force is due to Frege (1918-19).

³ See Searle, John R. & Vanderveken, Daniel (1985) *Foundations of Illocutionary Logic*, Cambridge University Press

⁴ See Searle's contribution "How Performatives Work" to the present volume.

⁵ See D. Vanderveken (1997c) "La logique illocutoire et l'analyse du discours", Vanderveken (2001) « Illocutionary Logic and Discourse Typology » and Searle's Reply (2001) "Expanding the Speech Act Taxonomy to Discourse"

⁶ Searle and Vanderveken, (1985, p.179)

⁷ The two senses are connected. For the discursive types which are named in one sense are interventions whose master speech acts have the illocutionary force which are named in the other sense.

⁸ See *Formal Semantics of Success and Satisfaction*, Volume 2 of my book (1991) *Meaning and Speech Acts*,

Cambridge University Press, for a sound and generally complete formulation of the logic of elementary illocutionary acts.

⁹ See chapter 4 The Ideal Conceptual Language of General Semantics of Volume 2 of *Formal Semantics of Success and Satisfaction*, *op. cit.* For a richer ideographic language capable of expressing action, historic modalities, indexical and ramified time, see my next book on *Discourse*.

¹⁰ See Searle (1982) *Intentionality*, Cambridge University Press and the paper "Possible Directions of Fit between Mind, Language and World" by Candida Jaci de Sousa Melo in this volume.

¹¹ It is a mistake to reduce acts of conceptual thought such as commitments to future actions and attempts to judgements just as it is a mistake to reduce states of conceptual thought like intentions and desires to beliefs. In order to commit himself to an action an agent must do more than judge that he is committing himself. Similarly an intention of doing something is more than a belief that one will do it.

¹² Rules of translation into the ideal conceptual language of general semantics are formulated in chapters 4 and 7 of *Formal Semantics of Success and Satisfaction*, *op. cit.*

¹³ See N. Cocchiarella (1997) "Formally Oriented Work in the Philosophy of Language". However, as we will see later, the theory of truth of illocutionary logic is more sophisticated than that of Montague. For it analyzes differently the logical type of proposition so as to account for the fact that propositions are not only senses with truth conditions but also contents of elementary illocutionary acts.

¹⁴ See P.F. Strawson, *Subject and Predicate in Logic and Grammar*, Methuen, 1974

¹⁵ One can find a first formulation of the classical theory of truth by correspondence in Aristotle's *Metaphysics*. See A. Tarski (1944) "The semantic Conception of Truth and the Foundations of Semantics" See also my forthcoming paper "What is the Logical Form of a Proposition?" for a reformulation of the theory of truth by correspondence adequate for speech act theory.

¹⁶ As Candida Jaci points out farther in this Volume, four possible directions of fit exist between words and things because there are four possible different directions of fit between mind and things.

¹⁷ Speakers and hearers play asymmetric roles in single contexts of utterance. So language distinguishes naturally a speaker and a hearer-based illocutionary point with the world-to-words direction of fit. In the case of commissives, the world has to be transformed by the speaker and in the case of directives by the hearer. However, speakers and hearers are in a very different speech situation when they are involved in an intervention. For any hearer is then a potential speaker who can, in principle, speak in his turn and contribute to the intervention. For this reason there is a one-to-one correspondence between possible directions of fit and discursive goals in language use. So deliberations must contain both commissive and directive utterances.

¹⁸ See propositions 4.27, 4.28 and 4.3 of Wittgenstein's *Tractatus logico-philosophicus*, London : Routledge & Kegan Paul, 1961, original German edition 1922

¹⁹ See N. Chomsky, "Quine's Empirical Assumptions" and Quine's Reply to Chomsky in D. Davidson & J. Hintikka (eds.), *Words and Objections*, Reidel, 1969

- ²⁰ See R. Montague, (1970) "Universal Grammar" reedited in Montague, (1974), *Formal Philosophy*, Yale University Press.
- ²¹ See chapter 4 of D. Vanderveken, (1990), *Principles of Language Use*, Volume 1 of *Meaning and Speech Acts*.
- ²² E. Kant, *Critique of pure Reason*, Humanities Press, 1950, original German edition 1781
- ²³ See L. Wittgenstein, *Tractatus logico-philosophicus*, *op. cit.*
- ²⁴ See N. Cocchiarella (1998 p 71-72)
- ²⁵ The notion of circumstance comes from D. Kaplan (1979) "On the Logic of Demonstratives" Propositions are true in circumstances. A circumstance can be a moment of time, a possible world, a pair of a moment of time and history depending on the logic under consideration.
- ²⁶ As I said earlier, truth and satisfaction are logically related. In order to be satisfied, an elementary illocutionary act must have a true propositional content. So the traditional correspondence theory of truth propositions is part of the more general theory of satisfaction of illocutionary acts.
- ²⁷ The law of excluded middle holds for success and unsuccess just as it holds for truth and falsity. Either an illocutionary act is performed or it is not performed in speech situation. Failure is a special case of unsuccess which occurs only when the speaker(s) make(s) an unsuccessful attempt to perform that illocutionary act.
- ²⁸ The present theory of types is cumulative. Unlike Russell I admit the types of sets whose elements are of different types.
- ²⁹ The term and notion of intension come from Carnap (1956) *Meaning and Necessity*, University of Chicago Press.
- ³⁰ See D. Vanderveken (1995) "A New Formulation of the Logic of Propositions", (1997b) "Quantification and the Logic of Generalized Propositions", (1999a) "Success, Satisfaction and Truth in the Logic of Speech Acts and Formal Semantics" and (forthcoming) "Modality in the Logic of Propositions"
- ³¹ The truth of the disjunction in a circumstance is compatible with all the possible truth conditions of atomic propositions which are compatible with the truth of at least one of its arguments in that circumstance. But the truth of the conjunction is only compatible with those possible truth conditions which are compatible with the truth of both arguments.
- ³² W.T. Parry (1933) "Ein Axiomensystem fuer eine neue Art von Implikation (analytische Implikation)"
- ³³ Max Cresswell (1975) "Hyperintensional Logic"
- ³⁴ Bach, E. & Harnish, R., 1979, *Linguistic Communication and Speech Acts*, M.I.T. Press
- ³⁵ P. Cohen & H. Levesque (1990) "Rational Interaction as the Basis for Communication"
- ³⁶ I have formulated a similar recursive definition of the set of discursive types of interventions in D. Vanderveken

(1997c) “La logique illocutoire et l’analyse du discours”, (1999b) “Illocutionary Logic and Discourse Taxonomy”, (1999c) “La structure logique des dialogues intelligents”

³⁷ See the last chapters of *Foundations* and of Volume 1 of *Meaning and Speech Acts* for English performatives, the last chapter of my book (1989) *Les Actes de discours* for French performatives and the last chapter of my forthcoming book *Os atos de discurso* for Portuguese performatives. I have written these chapters respectively with John Searle, Kenneth MacQueen, André Leclerc and Danilo Marcondes. See also Susumu Kubo’s paper in this volume and his book *A Study of Japanese Illocutionary Force Naming Verbs*, Matsuyama University Research Institute, 1999.

³⁸ See Chapter 5 of Volume 1 and chapter 3 of Volume 2 of *Meaning and Speech Acts* for more considerations on the laws of language use.

³⁹ See chapter V of Volume I of *Meaning and Speech Acts* for more information on the semantic universals of language use.

⁴⁰ See A.N. Prior, *Objects of Thought*, Oxford: Clarendon Press, 1971.

⁴¹ My reformulation of Descartes’ *Cogito, ergo sum*.

⁴² See D. Vanderveken (1991) "Non literal Speech Acts and Conversational Maxims and D. Vanderveken (1997a) “Formal Pragmatics of Non Literal Meaning”

⁴³ See P. Grice, *Studies in the Ways of Words*, Harvard University Press, 1989

⁴⁴ See Searle, *Expression and Meaning*, Cambridge University press, 1979

⁴⁵ E. Bach & R. Harnish, *Linguistic Communication and Speech Acts*, M.I.T. Press, 1979

⁴⁶ F. Récanati, *Les énoncés performatifs*, Éditions de Minuit, 1981

⁴⁷ The term comes from P. Grice (1975) "Logic and Conversation"

⁴⁸ As Grice notices, the speaker may be faced with a clash between two maxims. He may be unable to respect fully at the same time the maxims of quality and quantity. For example, you might really want to ask for a whole bottle of cognac but refrain from making such a request (Violation of the maxim of quantity) because it would not be granted (Maxim of quality).

⁴⁹ See A. Kasher (1982) "Gricean Inference revisited"

⁵⁰ See my paper (1997a) “Formal Pragmatics of Non Literal Meaning”, *op. cit.*

⁵¹ See the end of my paper (1991) “Non Literal Speech Acts and Conversational Maxims” as regards the finite number of relevant facts of the background.

⁵² See J.R. Searle (1984) *Minds, Brains and Science*, Harvard University Press,

⁵³ See D. Davidson "Theories of Meaning and learnable Languages" in *Inquiries into Truth and Interpretation*, Oxford University Press, 1984

REFERENCES

Arnauld, A. & Nicole P.

1981 *La logique ou l'art de penser*[1662]. Paris :Vrin.

Austin, J.L.

1962 *How to Do Things with Words*. Oxford: Clarendon Press.

Bach, E. and Harnish, R.

1979 *Linguistic Communication and Speech Acts*. Cambridge: M.I.T. Press.

Carnap, Rudolf

1956 *Meaning and Necessity*. Chicago: University of Chicago Press.

Chomsky, N. M.

1969 "Quine's empirical Assumptions". In *Words and Objections*, D. Davidson & J. Hintikka (eds). Reidel.

1975 *Reflexions on Language*. Pantheon.

Cocchiarella, N.

1997 "Formally Oriented Work in the Philosophy of Language". In *Philosophy of Meaning, Knowledge and Value in the 20th Century, Routledge History of Philosophy* Volume X, J. Canfield (ed). Routledge.

Cohen, P. and H. Levesque

1990 "Rational Interaction as the Basis for Communication". In *Intentions in Communication*, P. Cohen *et al.* (eds).

Cambridge: M.I.T. Press.

Davidson, D.

1984 "Theories of Meaning and Learnable Languages". In *Inquiries into Truth and Interpretation*, D. Davidson.

Oxford: Oxford University Press.

Descartes, René

- 1953 *Méditations*, reedited In R. Descartes, *Oeuvres et Letters* [1641]. Bibliothèque de la Pléiade, Gallimard.
- Frege, Gottlob
- 1952 “Über Sinn und Bedeutung”, *Zeitschrift für Philosophie und philosophische Kritik* vol. 100[1892], translated in English by P. Geach “On Sense and reference”. In *Translations from the philosophical Writings of Gottlob Frege*, P. Geach and M. Black (eds). Oxford: Blackwell.
- 1977 “Der Gedanke” and “Verneinung”. In *Beiträge zur Philosophie des Deutschen Idealismus*, Volume 1: 58-77, 143-57[1918-19], translated in English «Thoughts» and «Negation» in G. Frege *Logical Investigations*, Yale University Press
- Grice, H.P.
- 1975 “Logic and Conversation”. In *Syntax and Semantics*, vol. 3, *Speech acts*, P. Cole and J.L. Morgan (eds). New York: Academic Press.
- 1989 *Studies in the Ways of Words*. Cambridge: Harvard University Press.
- Kant E.
- 1950 *Critique of Pure Reason*[1781]. New York: Humanities Press.
- D. Kaplan
- 1979 “On the Logic of Demonstratives”. *Journal of Philosophical Logic* 8 (1).
- Kasher, A.
- 1982 “Gricean Inference Revisited”. *Philosophica* 29 (3).
- Kubo, Susumu
- 1999 *A Study of Japanese Illocutionary Force Naming Verbs*. Matsuyama University Research Institute.
- 2000 “Illocutionary Morphology and Speech Acts”. this Volume.
- Montague, Richard
- 1974 *Formal Philosophy*. Yale University Press.
- W.T. Parry
- 1933 “Ein Axiomensystem fuer eine neue Art von Implikation (analytische Implikation)”. *Ergebnisse eines Mathematisches Colloquiums*, Volume 4.
- A.N. Prior
- 1971 *Objects of Thought*. Oxford: Clarendon Press.
- Quine, W. van Orman
- 1960 *Word and Object*. Cambridge: M.I.T. Press
- 1969 “Reply to Chomsky” In *Words and Objections*, D. Davidson & J. Hintikka (eds).Dordrecht: D. Reidel.

F. Récanati

1981 *Les énoncés performatifs*. Éditions de Minuit.

Searle, John R.

1969 *Speech Acts*. Cambridge: Cambridge University Press.

1979 *Expression and Meaning*. Cambridge: Cambridge University Press.

1983 *Intentionality*. Cambridge: Cambridge University Press.

1984 *Minds, Brains and Science*. Harvard.

1989 “How Performatives Work”. In *Linguistics and Philosophy* 12, reedited in this Volume.

2001 “Extending the Taxonomy to Discourse Reply to Vanderveken” in the issue 217 of *Revue internationale de philosophie*

Searle, John R. & Vanderveken, Daniel

1985 *Foundations of Illocutionary Logic* Cambridge: Cambridge University Press.

de Sousa Melo, Candida Jaci

2000 “Possible Directions of Fit between Mind, Language and the World”. this Volume.

P.F. Strawson

1974 *Subject and Predicate in Logic and Grammar*. Methuen.

Tarski, A.

1944 “The Semantic Conception of Truth and the Foundations of Semantics”. *Philosophy and Phenomenological Research* 4.

Vanderveken, Daniel

1988 *Les actes de discours*, Liège & Bruxelles, Pierre Mardaga.

1990-91 *Meaning and Speech Acts*, Cambridge University Press, Vol. 1, *Principles of Language Use*, Vol. 2, *Formal Semantics of Success and Satisfaction*.

1991 “Non literal Speech Acts and Conversational Maxims”. In *John Searle and his Critics*, Lepore E. and Van Gulick, R. (eds). Oxford: Blackwell.

1994 “A Complete Formulation of a Simple logic of Elementary Illocutionary Acts”. In *Foundations of Speech Act Theory*, S L Tsohatsidis (ed). Routledge.

1995 “A New Formulation of the Logic of Propositions”. In *Quebec Studies in the Philosophy of Science*, Volume 1, *Logic, Mathematics and Physics*, Boston Studies in the Philosophy of Science, Marion M. and Cohen R. (eds). Kluwer.

1997a “Formal Pragmatics of Non Literal Meaning”. In the special issue on Pragmatics of *Linguistische Berichte* 8.

1997b “Quantification and the Logic of Generalized Propositions”. In *Truth in Perspective*, C. Martinez, U. Rivas

and L. Villegas-Forero (eds). Averbury Series in Philosophy, Ashgate.

1997c “La logique illocutoire et l’analyse du discours” In *Le dialogique*, D. Luzzati *et als*(eds). Peter Lang.

1999a “Success, Satisfaction and Truth in Formal Semantics and the Logic of Speech Acts” forthcoming In *A Reader in Semantics*, S. Davis and B. Gillan (eds). Oxford: Oxford University Press.

2001 « Illocutionary Logic and Discourse Typology » forthcoming in the issue in press of *Revue internationale de philosophie* devoted to Searle, 217, pp 81-93.

forthcoming “Modality in the Logic of Propositions”. In *Partial, Dynamic and Epistemic Logic*, E. Thyssen and F. Lepage (eds). Kluwer.

forthcoming *Os atos de discurso* Editora da Universidade Federal do Rio de Janeiro.

forthcoming *Discourse*.

forthcoming “What is the Logical Form of a Proposition?”. In *Logic, Reason & Thought*, D. Vanderveken (ed). Wittgenstein, L.

1961 *Tractatus logico-philosophicus*[1912]. London : Routledge & Kegan Paul.