
PSYCHOLINGUISTIC ASPECTS OF LANGUAGE

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As a system of human knowledge language can be studied from overt behaviour which is the result of underlying knowledge and abilities man has in order to use language effectively.¹ Psycholinguistics is interested in these underlying knowledge and abilities, and makes use of psychology and linguistics in order *to study the mental processes underlying the acquisition and use of language*. Linguistics is concerned with the formal description of the structure of language (an essential segment of human knowledge that includes sounds and meanings, and the relevant grammar that relates sounds and meanings). Psychology is then concerned with how such systems are acquired in childhood (language acquisition) and how these acquired systems function in daily communication (language use that involves production and understanding of sentences). The psycholinguist, therefore, tries to go beyond mere description of language behaviour: he tries to formulate underlying structures and processes that account for the order found in observed behaviour. These formulations are called linguistic postulates.²

These postulates can help us understand some of the functions of the human mind.³ For instance, grammatical strings of words are much more liable to be memorized than ungrammatical ones. Look at the following three strings of words:

- (1)* libsa żghir storja aħdar qara tifla
- (2)* il-libsa ż-żghira ta' l-istorja l-hadra kienet qieghda taqra t-tifla
- (3) it-tifla ż-żghira tal-libsa l-hadra kienet qieghda taqra l-istorja

Speakers of Maltese will immediately realize that (1) is not a sentence because it has no grammar. It is only a collection of words. In (2) there is enough grammar to make it a sentence which still looks irregular on the literal level because:

- a. *storja* cannot have a *libsa żghira* (except metaphorically);
- b. *storja* cannot be *hadra* (except metaphorically);
- c. *libsa* (an inanimate object) cannot read, *taqra* (a verb requiring a human subject – except metaphorically);

1. David Crystal, *Linguistics*, 2nd Edition (Harmondsworth, 1987), 119.

2. Dan I. Slobin, *Psycholinguistics* (Illinois, 1971): 'Introduction'. The use of the asterisk in this paper indicates inacceptability.

3. Noam Chomsky, *Language and Mind* (New York, 1968), 84: 'I have tried to suggest that the study of language may very well, as was traditionally supposed, provide a remarkably favourable perspective for the study of human mental processes.'

d. *tifla* cannot be read (except metaphorically).

Still, (2) is easier to remember than (1), and (3) is the easiest of all because there are no irregularities involved. Grammar, therefore, helps us to remember better and to give meaning to strings of words.⁴ This meaning in Maltese depends upon the order that grammar imposes upon the structure.⁵ Order gives more coherence to the sequence and provides additional information like: the subject-object relationship (*tifla* – *taqra* – *storja*); through markers (function words, *ta'*, *l*-, and affixes, *-a*, *-et*) classes are identified (*l*- shows a nominal element), relations are specified (*ta'* relates *libsa* with *tifla*), and meanings are revealed (*-et* gives the idea of pastness).

All this is what makes grammar, which is *the knowledge that helps people speak and understand language*. This leads us to some basic language abilities of speakers. Consider the following sentence:

- (4) it-tifla l-kbira tad-direttur li qiegħda tghid li saret tqila għaliex xammet is-sagħtar ta' Kemmuna meta marret harġa ma' ta' l-iskola fil-Milied li għadda fethet kawża l-qorti kontra l-headmistress

Now try to answer these questions:

- a. Did you understand the sentence? (yes)
- b. Did you ever hear it before? (no)
- c. Could you think of a sentence which in all probability no one (including yourself) had ever experienced before but which others could understand? (yes)
- d. Is the sentence well-formed (i.e. grammatically well structured)? (yes)
- e. If we deleted *tghid*, would the sentence be well-formed? (no)
- f. If we deleted *l-kbira*, would the sentence be well-formed? (yes)
- g. The sentence contains at least 28 words. Could you make it even longer and still keep it well-formed? (yes)
- h. Is there a limit beyond which you could not keep it well-formed? (no)
- i. Were there any relevant hints in the environment that helped you understand it better (e.g. *riħa tas-sagħtar*)? (no)

The answers to these questions serve to illustrate some basic facts about speakers.⁶

4. Noam Chomsky, *Aspects of the Theory of Syntax* (Massachusetts, 1965), 14–15, 196–197. Here Chomsky discusses the finiteness and organization of memory. See also P. N. Johnson-Laird, 'The Perception and Memory of Sentences', in John Lyons ed., *New Horizons in Linguistics* (Harmondsworth, 1971).

5. Dwardu Fenech, *Lingwistika Ġenerali* (Malta, 1980), 26–27.

6. The approach here is derived from Danny D. Steinberg, *Psycholinguistics: Language, Mind and World* (London, 1982), Ch. 1.

- i. Speakers can produce new sentences.
- ii. They can understand new sentences.
- iii. New sentences which are long can still be grammatically structured.
- iv. Understanding of new sentences does not depend on the environment.
- v. Speakers can make sentences longer.
- vi. Speakers can produce and understand an infinite number of sentences.

An important aspect from all this is productivity. In our language we have a finite vocabulary – the number of words in Maltese is limited. But we make use of those words to generate new sentences. We rarely invent new words, but we are continuously creating new sentences. It is a case of finite means providing for infinite ends – just like numbers: there is potentially speaking always a number greater than any number we might think of.⁷ As human beings, the Maltese have a potential of generating an infinite number of sentences which are generally novel events. It is the psycholinguist's task to try to discover how new sentences can be understood. We can learn all the Maltese words by heart, but we cannot learn all the sentences by heart. The psycholinguist talks about a *psychological system of rules* that extends a limited amount of experience to an ability of producing and understanding an unlimited number of sentences.⁸

So far we have already established that as human beings we have:

- # knowledge to produce an infinite number of sentences;
- # knowledge to understand an infinite number of sentences;
- # knowledge of making sentences longer.

But what is the nature and development of this ability? To provide a partial answer to this question, we must examine further some of the universal aspects of linguistic competence.

Man has certain linguistic intuitions that help him to generate and comprehend an infinite number of sentences.⁹ These intuitions depend on various abilities¹⁰

7. Ibid., 3.

8. Slobin, 3.

9. Noam Chomsky, *Syntactic Structures* (The Hague, 1957; reprinted 1971), 15: 'Any grammar of a language will *project* the finite and somewhat accidental corpus of observed utterances to a set (presumably infinite) of grammatical utterances. In this respect, a grammar mirrors the behaviour of the speaker who, on the basis of a finite and accidental experience with language, can produce or understand an indefinite number of new sentences.'

10. Roderick A. Jacobs, Peter S. Rosenbaum, *English Transformational Grammar* (London, 1968), Ch. 1; Slobin, Ch. 1; Steinberg, Ch. 1. Apart from the Chomsky books, these three sources have been consulted for the four abilities discussed here. The application of the abilities to Maltese speakers is the author's.

some of which are:

- I. the ability to distinguish grammatical from ungrammatical sentences;
- II. the ability to analyse grammatical relations;
- III. the ability to perceive synonymity among sentences;
- IV. the ability to recognize ambiguity in sentences.

GRAMMATICALITY

We have already seen that we have the ability to distinguish between grammatical, (2) and (3), and ungrammatical sentences (1). We can also differentiate between what is acceptable (3) and what is unacceptable, (2) and (1). Therefore, our ability for grammaticality includes also the capacity for acceptability. For instance, we feel that (5) and (6) are grammatical and acceptable but (7) is unacceptable:

- (5) *l-istorja ta' San Ġwann ġrat fi żmien il-Kavallieri*
 (6) *l-istorja li kiteb Ġużè Galea ġrat fi żmien il-Kavallieri*
 (7)* *l-istorja ta' San Ġwann u li kiteb Ġużè Galea ġrat fi żmien il-Kavallieri*

It is unacceptable because it is ungrammatical through the use of the conjunction *u* which gives the stretch two subjects, implying that they are different things. The verb *ġrat* demands a singular feminine subject. This shows another property of grammaticality, namely the capability of joining sentences into longer ones. We know that (7) is anomalous, but we are capable of joining (5) and (6) in several correct ways, like:

- (8) *l-istorja ta' San Ġwann li kiteb Ġużè Galea ġrat fi żmien il-Kavallieri*

This leads us to another aspect of grammaticality: the knowledge of degree of deviation in Maltese sentences. If we look at the following:

- (9) *ir-rumanz jidher interessanti* (the most grammatical)
 (10)* *ir-rumanz jidher inkwetat* (the next most grammatical)
 (11)* *ir-rumanz jidher landa* (the least grammatical)

we would probably scale them in terms of the degree of deviation as suggested because of the following:

- i. (9) is grammatical – *jidher* is intransitive (i.e. used without a direct object) and the predicative (i.e. that part of the sentence which follows the verb and provides information about the subject of the sentence) is normally an adjective or an adjectival phrase: *interessanti* is an adjective that may be applied to human and non-human nouns alike. Since no rules have been broken it is not a deviant sentence and it goes on top of our scaling system.
- ii. (10) is anomalous – *jidher* is followed by the wrong type of predicative

since it is an adjective that normally accompanies a human subject. The sentence is deviant because of the wrong choice of predicative.

- iii. (11) is ungrammatical – the rules for intransitivity are broken because *landa* functions as a direct object here. So it is the most deviant because it has the least acceptable properties comparable with the normal sentence.

To understand better the concept of the degree of deviation we can explain it in terms of acceptable properties of each sentence.

- (9) – It is a sentence. (acceptable)
It has a subject, a verb, and a predicative. (acceptable)
Subject and verb agree. (acceptable)
Verb and predicative agree. (acceptable)
Subject and predicative agree. (acceptable)

NORMAL (NON-DEVIANT)

- (10) – It is a sentence. (acceptable)
It has a subject, a verb, and a predicative. (acceptable)
Subject and verb agree. (acceptable)
Verb and predicative agree. (acceptable)
Subject and predicative disagree. (unacceptable)

LESS NORMAL (DEVIANT)

- (11) – It is a sentence. (acceptable)
It has a subject, a verb, and an object. (acceptable)
Subject and verb agree. (acceptable)
Verb and object disagree. (unacceptable)
Subject and object disagree. (unacceptable)

LEAST NORMAL (MORE DEVIANT)

The amount of deviancy rests on the number of unacceptable properties an utterance contains.

The subject of deviancy brings us to another function of the ability for grammaticality. It helps us to interpret deviant sentences. Much of our understanding of metaphorical language in poetry, for instance, is largely the result of this faculty of interpreting grammatically unusual structures.

So the ability for grammaticality has at least these properties:

- # knowledge to distinguish between grammatical and ungrammatical sentences;
- # knowledge of joining sentences together;
- # knowledge of the degree of deviation;
- # knowledge to interpret deviancy.

GRAMMATICAL RELATIONS

As speakers of Maltese we are capable of determining the function of words in a sentence. If we look at a simple sentence like

(12) *il-kelb gidem lit-tifel*

it is easy for us to determine that *kelb* is the subject and *tifel* is the object. This ability helps us to analyse grammatical relations even when we have apparent nonsense like

(13) *it-triku kien qieghed jibxen fil-masfa*

To parse (13) we have to rely heavily on our ability to recognize grammatical relations (through the use of function words and affixes) and to predict structure (from these markers). The initial use of *it-* demands a nominal element that will complete the noun phrase. The noun phrase requires a verb phrase to complete the sentence. In (13) we can recognize the subject (*triku*), the main verb (*jibxen*) with the form of the imperfect and the place (*masfa*) where the action was taking place.

Our ability for grammatical relations includes knowledge of the properties of lexical words. Consider the sentences

(14) *Kevin wieghed lir-raġel li jitkellem*

(15) *Kevin ikkonvinča lir-raġel li jitkellem*

As native speakers we know that the subject of *jitkellem* in (14) is *Kevin*, but *ir-raġel* in (15). Our knowledge springs from the meaning of *wieghed* and *ikkonvinča*. The interpretation of (14) and (15) shows another point: that the ability of perceiving grammatical relationships is evident even when we have apparently similar sentences. Both (14) and (15) seem to have similar structures on the surface (SURFACE STRUCTURE), but we feel that at some deeper level (DEEP STRUCTURE) they have different meanings. This is fundamental in *transformational grammar* but it reveals another aspect of our linguistic intuition, namely that we can penetrate the surface structures of sentences to transform them into deeper structures that will show the underlying meanings.

This ability to analyse grammatical relations help us to see relations between sentences also, and it is particularly significant in performing transformations.

(16) *mort id-disko l-bierah* (declarative)

(17) *mort id-disko l-bierah* (interrogative)

(18) *ma mortx id-disko l-bierah* (negative)

There are three main concepts in all of these: an action (*mort*) done by a second person singular, a place (*disko*), and time (*il-bierah*). On the surface these

utterances are similar. In fact, (16) and (17) are the same (punctuation does not count here) and (18) differs only in the use of *ma* + *-x*. However, despite their similarity these three utterances do not have the same deep structure — i.e. they have a different underlying meaning as indicated next to the sentences.

Therefore, the ability for grammatical relations includes at least these properties:

- # knowledge to recognize the function of words in sentences;
- # knowledge to parse sentences;
- # knowledge of the properties of lexical words;
- # knowledge of transforming sentences from the surface structure to the deep structure for an underlying meaning.

SYNONYMY

Our knowledge of the transformation of sentences to discover underlying structures is partly responsible for our ability to recognize synonymous sentences — we can usually tell when two utterances have the same meaning, like:

(19) Ġużè Galea kiteb *San Ġwann*

(20) *San Ġwann* inkiteb minn Ġużè Galea.

The logical propositions underlying both sentences are identical. The difference in the surface structure is due to the passivization of (20). In this case synonymy is the result of the way utterances are structured: (19) and (20) demonstrate the active-passive relation of sentences. Sometimes word order in Maltese does not produce any difference in meaning:

(21) mort it-tokis il-bierah filghodu

(22) it-tokis mort il-bierah filghodu

(23) il-bierah filghodu mort it-tokis

(24) filghodu, it-tokis mort il-bierah

These utterances are synonymous despite the difference in word order. Similarly, the following are immediately recognized as having the same meaning:

(25) hamsa minn seba' tobba jaqblu li min ipejjep jista' jaqbdun kanser

(26) li min ipejjep jista' jaqbdun kanser jaqblu fuqu hamsa minn seba' tobba

(27) hemm qbil minn hamsa minn seba' tobba li min ipejjep jista' jaqbdun kanser

These sentences might never have been heard before, but there is no need for any conscious thought to realize that they all have a common meaning which is distinct from that of

(28) hamsa minn seba' li jpejpu jaqblu li t-tobba jista' jaqbadhom kanser

A general conclusion from all this is that sentences with different surface structures may have the same deep structure. Conversely, utterances with similar surface structures may have different deep structures.

Word synonymy is the simplest type of synonymy that can occur. Despite the fact that alternatives often carry different connotations, different words may have the same meaning. Word synonymy is responsible for the synonymy in the following:

(29) iż-żgħażaġħ iridu x-xoġħol

(30) iż-żgħażaġħ iridu impieg

(31) iż-żgħażaġħ iridu jaħdmu

Speakers of Maltese understand that the meanings of *xoġħol*, *impieg*, and *jaħdmu* are the same, and these render the utterances synonymous.

The ability to detect synonymity includes:

- # knowledge of sentence relations;
- # knowledge of performing transformations;
- # knowledge of recognizing word similarities.

AMBIGUITY

A native Maltese speaker will understand ambiguity in a sentence i.e. that a sentence has more than one meaning. Sometimes only one word is ambiguous as *naqra* in

(32) qgħadt naqra fuq is-sodda

We can extract two different interpretations that would correspond to the following:

- a. I lay down for a while on the bed (qgħadt f'it fuq is-sodda);
- b. I did some reading on the bed (qgħadt naqra ktieb fuq is-sodda).

Sometimes ambiguity is related to the grammatical (including morphological) structure of the utterance.

(33) l-istudenti qalulhom biex jistudjaw kollox fil-klassi

At least four different possible interpretations can be recognized:

- a. Huma qalu lill-istudenti biex jistudjaw kollox meta l-istudenti jkunu fil-klassi.
- b. L-istudenti qalu lilhom biex jistudjaw kollox meta huma jkunu fil-klassi.
- c. Huma kienu fil-klassi u qalu lill-istudenti biex jistudjaw kollox.
- d. L-istudenti kienu fil-klassi u qalu lilhom biex jistudjaw kollox.

We can disambiguate utterance (33) by relating it to any of its possible

interpretations (a–d) which serve to explain the ambiguity.

So the ability to recognize ambiguity involves:

- # knowledge of extracting different interpretations;
- # knowledge of relating ambiguity to grammatical structure;
- # knowledge to disambiguate.

Conclusion

When we use the skills described above¹¹ we are making use of our knowledge of the grammar of our language that is largely based on linguistic intuitions. It provides us with the information needed to understand and generate new sentences in Maltese.¹² These four abilities of linguistic intuition are our vehicle on the journey to understand each other because language as an infinite set of sentences is a characteristic specifically for humans.¹³ In producing and receiving language the various abilities involved reflect aspects of intellectual competence which we possess simply because we are human beings. And in trying to explain these abilities we are really trying to explain an aspect of our humanity.

11. These abilities are to be found in Crystal as follows:

grammaticality = pages 217–221

grammatical relations = pages 196–234

synonymity = pages 238–239

ambiguity = pages 207–298.

12. This is part of the creativity of language. This is well explained in the introductory chapter 'Basic Principles' in J. P. B. Allen, Paul Van Buren (ed.) *Chomsky: Selected Readings* (London, 1971), 8–9. See also Paul M. Postal, 'Epilogue' in Jacobs & Rosenbaum, 267–289.

13. Descartes in *Discourse on Method* (Part V) states: 'It is a very remarkable fact that there are none so depraved and stupid, without even excepting idiots, that they cannot arrange different words together forming of them a statement by which they make known their thoughts; while, on the other hand, there is no other animal, however perfect and fortunately circumstanced it may be, which can do the same.' This is quoted in Noam Chomsky, *Cartesian Linguistics* (New York, 1966), 4.