

The Origin of Language

CHARLES V. TAYLOR

ABSTRACT

Theories of the origin of language are first discussed from a linguistic point of view in secular writing. Evolution had less effect on linguistics than on other social sciences, yet history shows that secondary effects were felt. No true link has ever been found with animal communication. The work of Noam Chomsky brought linguists back to uniquely human origins for language, but the question is so complex that little headway can be made without investigation of mental factors. This survey concludes that the creative, miraculous element must be invoked, and the Bible itself gives hints of important features in the understanding of linguistic processes.

In discussing linguistic origins, people with some biblical background will often confuse language and languages. In such a discussion, thoughts often settle first on the Tower of Babel. However, the Bible indicates that there were two distinct miraculous events: the original creation of Adam as a talking and understanding being; and the subsequent division of humanity into language groups as a judgment on the rebellion of the descendants of Noah. This article is concerned with the former.

But first, the question of pre-programming for language, as against a learning process, is not strictly relevant to the question of the creation of a linguistic ability. However, the Lockean assumption of a 'clean slate' before learning went to extremes with behaviourists like B. F. Skinner, who dominated language learning in mid-century. The arrival of the linguist Chomsky on the scene restored a balance, in that it favoured a pre-programming prior to learning.

This pre-programming represented the universal human linguistic gift, quite distinct from whether someone is a 'good linguist', meaning that they are good at learning foreign languages. All humans have a 'linguistic gift', given, I believe, at creation, but only some can operate in more than one specific language easily. Our English language is deficient in that we cannot in argument terminology distinguish between these two uses of the term 'linguistic gift'. In this article I deal with the ability to speak a 'mother-tongue', which is all I am referring to, and not to the additional gift of being what popular jargon calls a 'linguist'.

It was Noam Chomsky who restored interest in human universal ability to speak coherently, and he restored the balance by criticising the 'empty slate' stance of Skinner and others, saying that this was insufficient to account for

all the facts. It is significant that Chomsky, though an agnostic, still regarded human language as 'miraculous', distinguishing humans from animals. To that extent he departed from some evolutionist assumptions. Naturally, a human exposed to a specific language would not speak coherently, so there must be an environmental catalyst. It is not true that feral children have no programmed ability to understand any future language to which they would become exposed, as will be seen by reference to evidence later in this article. It may be, of course, that if a feral child managed to reach adulthood without ever contacting a language environment, such an ability might have atrophied by the time of post-puberty, as hypothesised by some of the Chomsky school.

But my chief aim in this article is to exult in the wonder of the signs of God's creative gift, as witnessed in the human mind.

Most secular writers have avoided the question during most of the twentieth century. This attitude can be traced to the changed interests of linguists consequent on the seminal work of Ferdinand de Saussure, especially the proposition that 'states of language' are far more significant to linguists than the history of language.¹ His terms were 'synchronic' (non-historical) as opposed to 'diachronic' (historical) studies.

This was a reaction against the nineteenth century preoccupation with what used to be called 'philology', in which etymology and the establishment of boundaries between language families were key ingredients. The pendulum is slowly swinging back to the study of language in history, partly through interest in the way pidgins and Creoles come about, and in language change.

FROM ANIMALS TO HUMANS?

As regards the origin of language *per se*, it should be noted that when evolution was first applied to linguistics, early attempts at linking human language to animal communication were the chief subjects of debate. How could chattering ape-folk transform a needs-motivated set of habits into the phonological complexity we now call language? The animals can on their own terms communicate, but not in the positive sense of reading the communicator's mind or intentions, though in those days 'mind' was itself a taboo word. Most animal cries relate to distress, belonging to the pack, mating approaches or antagonism.

After Darwin, most evolutionist linguists made the assumption that the Babel event recorded in Scripture never really took place, or if it did, not in a miraculous manner.² One might say that, while evolutionists reject a literal Genesis anyway, in terms of emphasis:

- evolutionist linguists reject the Babel account
- evolutionist geologists reject the Noahic Flood account
- evolutionist biologists reject the account up to the creation of humans
- evolutionist astronomers reject Genesis 1:1-16

For example, Gamkrelidze and Ivanov claim that linguists can work backwards in the way that microbiologists try to go back to understand the evolution of life. Linguists have, they say, '*reconstructed the vocabulary and syntax of the postulated Indo-European protolanguage with increasing confidence and insight*'.³ I would agree about the confidence, but I'm not so sure about the insight! Study of the phonology, grammar and lexis of ancient languages can do no more than associate diverse languages, or very broadly identify language families. Study of vocabulary usually includes semantics, through which it is hoped to understand non-linguistic features of ancient societies and so assist anthropologists.

Shevoroshkin argued that language reflects a people's social and practical concerns and that this would be an improvement on conventional archaeology, which cannot 'speak' to us.⁴ In trying to reduce the number of distinct language families (and so avoid the miracle of Babel), Shevoroshkin introduced the label 'Nostratic' for the 'reconstruction' of a protolanguage linking five or six major language families. He focused on pronouns, body parts and major features of the environment. But this is extremely speculative, and depends on the researcher's individual semantic interpretations.

However, the problem is that we have no absolute information to tell us how word meanings had changed before the arrival of dictionaries, and even when lexicons are available

- (a) they have to be dated from extra-linguistic artefacts and
- (b) other than obvious labelling, which is rare in ancient times, the exact meanings of words and expressions are still relatively inaccessible.

Lewin argued that

*'unlike biogenic species, languages change at an astonishing rate, as anyone who has struggled with Chaucer will attest. As a result, most historical linguists agree that going back more than 5,000 to 7,000 years is a futile enterprise.'*⁵

Even during the evolution-dominated years, leading linguists, wishing to move away from nineteenth century naivete, have steadfastly refused to investigate possible links with animal communication. The best-known linguist of the twentieth century, Noam Chomsky, though an evolutionist, has consistently maintained that there is no connection;⁶ and that, as Descartes (not surprisingly) insisted long before him,⁷ language is 'species-specific',⁸ and must have originated in humanity through some genetic input. To this extent, trans-speciate evolution seldom came into the picture in linguistics.

In fact, Chomsky insists that mid-century studies based on the evolution of language from apes to humans only 'bring out more clearly the extent to which human language appears to be a unique phenomenon, without significant analogue in the animal world.'⁹

Karl Popper proposed 'stages' from vocal gestures used to express emotion and onwards, but Chomsky sees no continuity in this,¹⁰ and certainly no mechanism is even suggested. W. H. Thorpe even pointed out that from physical characteristics one might regard birds as a more likely source for language than mammals! Nevertheless, he regarded human language and animal communication as having three features in common: both are 'purposive', aiming to change another's behaviour; 'syntactic', that is, having internal structure; and 'propositional', transmitting information.¹¹ To a creationist, even if such terms are appropriate, this merely indicates a common Creator. As for Chomsky, he commented by pointing out that walking could also be said to have these three characteristics, so that Thorpe's propositions seem to lead nowhere.¹²

Strange labels were given to nineteenth century attempts to formulate some credible basis for language arising from primitive communication in social contexts. Some such were:

- (a) the 'bow-wow' theory, suggesting that ejaculatory noises began to acquire specific meanings, much in the way that dogs may radiate pleasure, aggression, etc. through different barking styles;
- (b) the 'ding-dong' theory, with calls for help, as in today's world of sirens, triggering off messages with specific content; and
- (c) the 'yo-heave-ho' theory, suggesting that combined labour encouraged comments and directions to emerge.

Still others have exhaustively examined child language in the hope of finding a progression which might in some recapitulatory framework mirror the first human attempts at communication.^{13,14} But this theory has the same drawbacks as those of Haeckel's embryonic recapitulation theories, except perhaps that we can trace no deliberate

forgery in its presentation.

Chomsky insists that grammar is not learnt in the child by trial and error, or else children could not make new grammatical sentences which they have never heard before.¹⁵ That this takes place is shown by experiments using nonsense words and asking the child to respond to questions which they must process.¹⁶ In connection with Columbia University's experiments with apes, Chomsky stated that *'saying apes can acquire language because they can learn some simple signs. . . is like saying humans can fly because they can jump'*.¹⁷

Lenneberg studied language impairment in the 1960s and said this shows that when recoveries occur they can be sudden, indicating a species-specific ability.¹⁸ Such recovery also depends on having acquired language during a critical period of development in childhood. Children unconsciously process their parents' language in order to work out the grammar. But *hearing is an essential part of language, because by its very nature language has to be a shared code*.⁹

Linguists are agreed that a distinction must be preserved between conditioning through learning by imitation and learning by rules applied to incoming signals. The second of these theories of language development points strongly to a divinely bestowed genetic gift to humans.

In this connection, Carroll was one of the first to distinguish 'language acquisition' (learning the mother-tongue) from foreign or second language learning.²⁰ He asks whether first language learning is learning at all, or whether perhaps it is rather a biological process of growth, or as Chomsky would say, *'genetic maturation' or 'linguistic competence'*.²¹ Most today would say that first language learning is a mixture of genetic maturation and social learning.

What is remarkable (and miraculous) is that it begins spontaneously in the normal child, and that adults do not in any formal sense 'teach' language. When they correct children it is usually on matters of truth or appropriateness. Only a minority with interest in language will bother to correct the language itself. Despite this, children stubbornly learn to communicate. They also react differentially to different voices and, in bilingual societies, to different languages.

Chomsky often uses the term 'creative' when referring to the ability of the child to acquire a grammar.^{22,23} He also insists that *'a description of what an organism does and a description of what it knows can be very different things'*.²⁴ Menyuk concluded that the average child gets its grammar by age three, though Chomsky is more cautious and merely regards it as very early acquisition.²⁵

THOUGHT AND LANGUAGE

In addition to interests in child language, philosophers have often written articles on the relationship between thought and language, in an attempt to unravel the

mechanisms of language production. Language is, mysteriously, at the same time both physical and mental, and the two modes must meet somewhere. Yet in a sense, the establishment of this relationship is both pointless and obscure. Pointless, because mere humans cannot fathom the true depths of such a relationship, and obscure, because 'thought' is impossible to measure scientifically or even to illustrate by any adequate metaphor or model.

Many scientists who are Christians rightly sing the praises of God when describing the human body. Indeed, much can be said scientifically about the wonders of the human ear. Yet this knowledge is overtly describable, whereas the link between brain-thought and mouth-speech is much more ineffable and recondite.

What is the use of humans having a wonderful and most delicate aural system, if you cannot link it to a brain that can understand language? Many animals, doubtless, can be shown to have remarkable hearing, but animals cannot talk, neither can they, in the accepted linguistic sense, understand speech. They may respond to noise and even voice-tone, but, so far as we can discover, they do not act in any non-programmed way, such as is characteristic of human use of language. We therefore assume that language is unique to humans.

Some thirty years ago Chomsky referred to *'the particular branch of cognitive psychology known as linguistics'*,²⁶ thus placing thought squarely in the centre of linguistic capacity. Indeed, the use of language cannot begin to be understood until some connection is made between processes of thought and processes of speech. That's why language is so miraculous. It just has to be a gift from God. The study of language is really the study of mind, as shown in Figure 1.

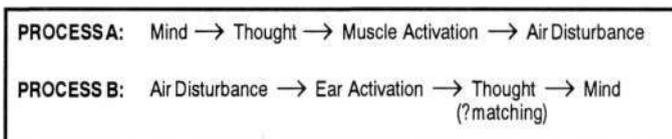


Figure 1. A representation of the two stages we might call communicating and understanding.

Figure 1 is a crude representation of what happens in the two stages we might call communicating and understanding. It will be seen that this representation includes

- (a) mental events,
- (b) physiological events, and
- (c) physical events,

and so incorporates the non-living world, the biological world and the world of the invisible within the functions of the brain. In that sense, one might say 'language is everything'. Who is able to investigate such an amalgam?

Granted that early behaviourist psychologists like Watson tried to show parallels between physical and mental phenomena, no experiment they produced was able to establish true correlates with the processes of thought

through mechanical measurements. According to Chomsky:

*'What is involved is not a matter of degree of complexity but rather of quality of complexity. Correspondingly, there is no reason to expect that the available technology can provide significant insight or understanding of useful achievements [or] any significant advance in our understanding of the use or nature of language.'*²⁷

Indeed, he insists that this was known in principle in the seventeenth century:

'The Cartesians tried to show that when the theory of corporeal body is sharpened and clarified and extended to its limits, it is still incapable of accounting for facts that are obvious to introspection and that are also confirmed by our observation of the actions of other humans.'^{28*}

There is more to it, then, than the physical, and we are hard put to it to find anything equivalent in the animal world. This is what Chomsky calls *'the creative aspect of language use'*.²⁹ Descartes wrote that normal language use is a certain sign that there is a reality we know as 'mind', and that linguistic ability *'cannot be detected in an animal'*.³⁰ In the late sixteenth century a Spanish doctor, Juan Huarte, wrote a study of human intelligence, stating that its best evidence is language use, imparting a creative capacity.³¹

In a trivial sense it may be argued that there is a creative element in understanding as well as in speaking, if indeed the 'matching' theories are correct. Some linguists have argued for an internal generation of speech to match incoming signals as part of the process of understanding. This would explain why Lashley, as far back as 1951, performed a linguistic experiment on his audience at a conference. To make this experiment work for the reader I have had to misspell the second word, to give something like the effect of 'hearing' the following sentence read out, roughly as Lashley read it out from a novel:³²

*'Rapid riting with his left hand proved difficult, but successful in saving from further damage the fixtures in the capsized canoe.'*³³

Lashley's audience wrote it down as 'writing', and then by the end of the sentence something 'clicked' and they had to delete this and substitute 'righting'. This, according to Chomsky, showed that the understanding of language is not merely a mechanical linear process but has a re-creative element sometimes brought into play even when the language has been fully 'learnt'.

If creativity is involved in understanding as much as in the production of language, this helps us to accept the fact that we understand more than we can produce. In both first and second language learning it is clear that in exchanges we understand more than we produce, even in the matter of learning new sounds.

Berko and Brown record an interview with a toddler who had not yet managed to produce the English sound represented by the letters 'sh'. The interview went something like this:

Adult: Is that your fish?

Child: Yes, my fis.

Adult: Oh, I see It's your fis?

Child: No, not my fis. My fis.³⁴

It is obvious that the child recognised the distinction of consonants, but could not produce the actual distinction physically.

The creative aspect of language use itself involves:

- (a) innovation, which is beyond mere analogy and embraces concordant analogy;
- (b) freedom from detectable stimulus; and
- (c) positive suitability to the situation in which it is used.³⁵

The famous Port-Royal *Grammar* summarised this threefold description by stating:

*'[human language is a] marvellous invention by which we construct from twenty-five or thirty sounds an infinity of expressions which, having no resemblance in themselves to what takes place in our minds, still enable us to let others know the secret of what we conceive and of all the various mental activities that we carry out.'*³⁶

Chomsky's most common description of language is that it is 'rule-governed behaviour'. This reminds us of God's command to humans in Genesis 1:28 to 'have dominion' over the animals and over the entire physical world. Without becoming irreverent we could say that it is part of the 'image of God' placed in humans, even though most Christians would relate that only to what is 'spiritual'. Yet it seems that, without a conscious mind, spiritual abilities cannot properly be exercised.

George Miller claimed that

*'talking and understanding language do not depend on being intelligent or having a large brain. They depend on "being human" . . . [a child] acquires [language] from parents who have no idea how to explain it to him. No careful schedule of rewards for correct or punishments for incorrect utterances is necessary.'*³⁷

J. L. Austin further investigated what might be called the 'power of words'. This must not be confused with some of today's heretical views on so-called 'faith' speaking. But it is true that we do perform mental assurance through words.³⁸ One example of this is the way we use ceremonies to make marriage valid, using set wordings. Another is the way a prominent figure launches a ship saying: *'Thereby name this ship . . .'*

THE BIBLICAL PERSPECTIVE

Can we learn something about the origin of language from a direct approach to Scripture? The first example of language used in Genesis 1:3 is significant. God 'says' (Hebrew *'amar*). At this stage there is no human present to hear it, though we shall argue that its appearance in the written record means that we 'hear' it in a sense today in our own language, so it certainly has a message for us.

One spiritual message is that in God's mouth speech is powerful and creative. After all, God 'made man's mouth'.³⁹

Such a passage assures us that there is power in 'the Word', the name Scripture gives to the Bible itself, and to messages based on Scripture given by God's true messengers. There is a whole theology here, somewhat beyond our current concerns.

For example, why does this word 'said' occur so early in the piece, before the creation of humans? Is it that, for humans to have meaning as creatures, it was necessary for the concept of language to exist even in the Godhead? In what sense is the Lord Jesus Christ called 'the Word of God' through the Apostle John and others?

Coming now to physical creation, the first occurrence of language where humans are recorded as already created is in Genesis 1:28: *'Then God blessed them, and God said ..'* In Scripture 'blessing' is always connected with words, so here we have one of Austin's 'performatives'. But this also takes us out of the mystic use the word has been acquiring in some churches at this time, a usage which is of very doubtful validity, since 'blessing' has no necessary connection with feelings, but with an understanding of God's love.

God gives commands to Adam and Eve (for Eve's creation is assumed here through the plural 'them', even though the manner of creation is not specified until Genesis 2:22 in the recapitulation of this one and only creation of woman). Thus we see that God expresses His love in blessing them even before giving them the laws for their life on the perfect Earth He has created for them.

From Genesis 1:28 we have to assume that Adam and Eve could understand language, for God never uses any methods purposelessly. This human pair were equipped with a highly complex aural system, behind which was an even more complex brain and thought system. By now we are into one of the greatest and most controversial arguments of linguistically inclined academics. Some say with Locke that the mind is a *tabula rasa* (empty tablet) on to which language impinges in childhood.⁴⁰ Others say there is a genetic ability to understand before any meaningful language is addressed to the young child. The Bible appears to support the latter, since

- (a) God's words must not be fruitless, and
- (b) shortly after this we find Adam engaging in dialogue with God.⁴¹

Note that the programming is only concerned with the ability to understand and not with any automatic responses to what is understood.

But before that we find Adam speaking unprompted before God in Genesis 2:23. He speaks poetically. And here we come up against the nineteenth century idea that poetry is more 'primitive' than prose, for which there is surely no evidence linguistically. In fact, rhythmic or semantically parallel utterances are obviously more advanced than plain speech. However, we know that the idea of the 'primitive savage' came from minds like that of the unbeliever Rousseau, later to be taken up by the evolutionists.

We are not saying that Adam was preprogrammed with God's language, because we do not understand such things, not having been present. Adam as a functioning adult must have had some special programming, but we cannot say to what extent this directed his speech. He would presumably thereafter learn from his linguistic environment, just as we do.

Scripture nowhere condemns talking to oneself. In fact, most people understand David to be doing just that in Psalm 103:1-5. Of course, Adam's poem could have been addressed to Eve, and 'this' may have been his original word for 'you', in the manner of an I-not I relationship, since he had never before seen a human being. Thus it's not clear in Genesis 2:23 for whom Adam is speaking. Most likely it was in thanks to God anyway, since anything the sinless Adam did in this perfect world must have been to God's glory. I doubt if it was mere soliloquy.

From the above we note that the Bible gives evidence of 'receptive' communication, followed by what linguists call 'productive' communication. Although this is the agreed order of things in child language development, the case with Adam is an adult situation and should not be compared, in case we are led into theories of physical recapitulation of events. God had, with the miracle of bodily creation, also given Adam a miraculous gift, which we call 'language'. Thus the Bible describes no age-long practice prior to the establishment of normal adult linguistic ability.

To complete the picture, Scripture shows a discussion between God on the one hand and Adam and Eve on the other, indicating that by this time certain quasi-logical elements were present in human language. We have to remember that this element, though undoubtedly within God's power to bestow, was not necessarily in His perfect will at that time. After all, another voice, that of a fallen angel, had intervened in Genesis 3:1. This intervention introduced the question form into human thought and language.

Now the question itself is not a sinful form. God Himself is recorded as using it on numerous occasions. But this is a far different matter from the mental and indeed spiritual act of questioning the integrity of God's character. Here we have gone beyond language into morality and Divine-human relationships.

CONCLUSION

Returning to the physical, we see that practically all the known functions of language are in evidence right from the creation. We can therefore say with confidence that God created language and that language is a perfect gift, powerful but therefore dangerous in a sinful world. Yet the wonder of the gift remains, and I am continually amazed as I ponder the remarkable way in which such an apparently unrelated set of events as we have in our bodies becomes a vehicle for complex and, if we allow the Holy Spirit to teach us, uplifting thoughts.

REFERENCES

1. de Saussure, E, 1916. **Course in General Linguistics**, in English, 1959, p. 102.
2. Greenberg, J. H., a specialist in historical linguistics, is typical. He speaks of 'the Babel legend' in 'The linguistic approach' part of 'Three approaches to language behavior'. *In: Osgood, C. E. and Sebeok, T. A., 1965. Psycholinguistics: A Survey of Theory and Research Problems*, p. 16.
3. Gamkrelidze, T. V and Ivanov, V V, 1990. The early history of Indo-European languages. **Scientific American**, 262(3): 82-89.
4. Shovoroshkin, V, 1990. Linguists have the first word. **New Scientist**, 128(1722):28.
5. Lewin, R., 1990. Ancestral voices at war. **New Scientist**, 128(1722):25.
6. Chomsky, N., 1968. **Language and Mind**, p. 9.
7. Chomsky, N., 1966. **Cartesian Linguistics**, as cited in Chomsky, Ref. 6, p. 8.
8. Chomsky, Ref. 6, p. 9.
9. Chomsky, Ref. 6, p. 59.
10. Chomsky, Ref. 6, p. 60 (both references).
11. Chomsky, Ref. 6.
12. Chomsky, Ref. 6, pp. 60-61.
13. Lewis, M. M, 1951. **Infant Speech: A Study of the Beginnings of Language**.
14. Black, M, 1968 (1972 edition). **The Labyrinth of Language**, p. 15.
15. Chomsky, N., 1957. **Syntactic Structures**, *passim*.
16. Fishbein, J. and Emans, R., 1972. **A Question of Competence**, pp. 46, 48, 54, 55.
17. Horgan, J., 1990. Profile of Chomsky. **Scientific American**, 262(5): 17.
18. Lenneberg, E., 1962. Understanding language without ability to speak: a case report. **Journal of Abnormal and Social Psychology**, LXV:419-425.
19. Pinker, S., 1994. An instinct for language. **New Scientist**, 142(1931):30.
20. Carroll, J. B., 1960. Language development in children. *In: Encyclopaedia of Educational Research*, *ad loc.*
21. Chomsky tends to stress maturation in psychological works, and competence in linguistic writing.
22. Chomsky, Ref. 6, p. 6.
23. Chomsky, N., 1964. **Current Issues in Linguistic Theory**, pp. 8f, 111.
24. Chomsky, N., 1963. Formal properties of grammars. *In: Handbook of Mathematical Psychology*, E. Nagel *et al.* (eds), pp. 328-418.
25. Menyuk, P., 1963. A preliminary evaluation of grammatical capacity in children. **Journal of Verbal Learning and Verbal Behavior**, 2:346-351.
26. Chomsky, Ref. 6, p. 1.
27. Chomsky, Ref. 6, p. 4.
28. Chomsky, Ref. 6, p. 5.
29. Chomsky, Ref. 6, p. 6.
30. Chomsky, Ref. 6, p. 6.
31. Chomsky, Ref. 6, p. 9.
32. Lashley, K. S., 1951. The problem of serial order in behavior. *In: Cerebral Mechanisms in Behavior*, L. A. Jeffress (ed.), pp. 112-136.
33. Most people on hearing this spoken think first of rapid writing, but then towards the end of the sentence have to change the whole meaning to fit the complete sentence. This involves a grammatical and semantic shift.
34. Berko, J. and Brown, R., 1960. Psycholinguistic research methods. *In: Handbook of Research Methods in Child Development*, P. H. Mussen (ed.), pp. 517-557.
35. Chomsky, Ref. 6, pp. 10-11.
36. Chomsky, Ref. 6, p. 18.
37. Miller, G. A., 1968. **The Psychology of Communication**, pp. 86, 87.
38. Austin, J. L., 1962. **How to Do Things with Words**, which is the seminal book on 'performative' verbs and expressions.
39. Exodus 4:11.
40. John Locke (1632-1704) was the best-known Western proponent of the empirical idea that humans begin life with an 'empty slate' on to which all we learn is 'written' during our lifetime.
41. While it is true that God spoke to the sea creatures in Genesis 1:22, there is no indication either in Scripture or from science that animals understand language in the way humans do. Certainly they may 'respond', and they may have been more sensitive before the curse arrived, but in any case the matter is not relevant to this discussion.
42. Perhaps the only feature of child language acquisition on which all linguists agree is the fact that, whether in teaching or testing circumstances, humans always show a greater ability to understand than to produce language.

Charles V. Taylor has B.A.s in languages, music and theology, an M.A. in applied linguistics and a Ph.D. in a central African language. He is a Fellow of the Institute of Linguists, and for eight years served as Co-ordinator of applied linguistics courses in The University of Sydney. The author often Christian books, Dr Taylor now lives in semi-retirement in Gosford, New South Wales, having served on the staff of Garden City School of Ministries and on the Board of Creation Science Foundation.