

LANGUAGE ECOLOGY AS LINGUISTIC THEORY

Mark Garner

School of Language and Literature University of Aberdeen
Scotland, United Kingdom
m.garner@abdn.ac.uk

ABSTRACT

Language ecology was proposed by Einar Haugen in 1972 as the study of the interaction of any given language and its environment. Despite some use of the term in the literature, sociolinguists have failed to develop the potential that Haugen saw in an ecological approach. Recent developments in ecological thought, however, when applied to language, raise questions about many basic assumptions of conventional linguistics. For example, from an ecological perspective, language is not a rule-governed system, but a form of patterned behaviour arising from the needs of human sociality: communication, culture, and community. As Haugen foresaw, language ecology offers an exciting alternative approach to linguistic theory.

Key words: *language ecology, patterned behaviour, holistic, dynamic, and interactive*

1. Introduction

In an article published in 1972, the Norwegian-American linguist, Einar Haugen, proposed a new approach to the study of language in multilingual societies. He called this approach 'language ecology', and defined it as 'the study of the interaction of any given language and its environment'. Haugen's extensive writings in linguistics and philology were primarily concerned with the ways in which different languages, in their spoken and written forms, co-exist and interact in a multilingual community. The focus of language ecology as he conceived of it was communal and cultural interaction, and the term has been used from time to time in the literature devoted to the study of multilingual societies (a recent Indonesian example is Wijayanto, 2005).

With a few exceptions, however (e.g., Mackey 1980; Haarmann 1988; Nelde 1989; Mühlhäusler 1996; and my own doctoral thesis and derived publications—see Garner 1988), linguistic researchers have failed to develop the potential that Haugen saw in an ecological approach. One difficulty is that, in his article, Haugen appears to be unsure whether he is proposing, on the one hand, that it could provide a theoretical basis for a distinct discipline and, on the other hand, that it was an interesting metaphor for some aspects of societal multilingualism. Subsequent writers have failed to clarify the issue by analysing the concept thoroughly. The result is that, although the term 'language ecology' is common enough in the field, writers have used the term loosely and in a generally ill-defined manner. Edwards

(1995) was right to point out that, twenty years after it first appeared, language ecology had made no really significant contribution to the study of multilingualism. The theoretical potential of the idea was not fully explored until my own recent study (Garner, 2004). Terms such as 'language (or linguistic) ecology', 'the ecology of language', and (with a different emphasis) 'ecolinguistics' (Fill and Mühlhäusler [eds] 2001) have gained some currency. Linguists' conceptions of ecology, however, have not been informed by recent philosophical advances, have been generally left as imprecise and limited as they were thirty years ago.

This paper makes two broad points. First, I examine the causes of the uncertainty about what language ecology means and what it implies for linguistics. These causes are to be found in Haugen's idea that ecology is a metaphor, because it is a metaphor that does not quite work. Secondly, I show how ecology can now be given a central role in the study of language. This is possible because of significant developments in ecological thought in the past three decades since Haugen's article appeared. Ecological philosophy no longer sees ecology merely as a feature of the natural environment that can serve as a metaphor for other phenomena, but as a distinct way of thinking, with far-reaching implications for many disciplines, including the language sciences.

2. Haugen's Proposal

Haugen was dissatisfied with contemporary approaches to linguistic description. Linguists, he said, too often treated the speech community of a language as nothing more than a bit of incidental background to what they saw as the real job of linguistics. They were 'too eager to get on with the phonology, grammar, and lexicon', to give more than passing acknowledgement to the fact that languages exist because they are used by real people in communities in order to communicate. Linguists were happy to

leave such matters to anthropologists, sociologists, and their like, but he argued that there was 'a strong linguistic component in language ecology' (1972: 325. All references to Haugen in the remainder of this paper are to the page numbers of this 1972 article). In simple terms, he made no distinction between theoretical linguistics and sociolinguistics.

Haugen was proposing some sort of an analogy with the natural world, and the term 'environment' of language makes one think immediately of the physical surroundings in which language is spoken. However, he defined environment in a different, and at first sight somewhat surprising, way: the environment is not the physical setting but the social and cultural setting in which the language is used. In other words, the environment is the speakers of the language:

The true environment of a language is the society that uses it as one of its codes. Language exists only in the minds of its users, and it only functions in relating these users to one another and to nature, i.e., their social and natural environment [...]. The ecology of a language is determined primarily by those who learn it, use it, and transmit it to others. (325)

A language should not be treated simply as a structural system (phonology, morphology, syntax, etc.) which exists somehow independently of its speakers. It is, he says, impossible to understand the language without the speakers. This claim was not original to Haugen, but it had largely been lost sight of, particularly in America, in the preceding half-century or so since Saussure (no date [1916]) outlined the foundations of linguistics as a 'scientific', structuralist discipline. Haugen did not argue that linguists should not be interested in structure—he himself was an expert in phonetics and phonology—but he was attempting to restore a

balance with his notion of community-as-environment as one of the central elements in linguistic description.

When I first came across these ideas, I was working on my doctoral research into immigrant communities and their languages. Haugen's paper seemed to encapsulate an idea for which I was searching, and it promised the ideal theoretical framework within which to conduct my fieldwork. I was surprised to find, then, that although Haugen's paper had already been in print for some years, no-one seemed to have attempted to develop his schematic ideas into a systematic theory. In my thesis, I spent some time trying to do this for myself, but with limited success (Garner 1986, 1988). Nonetheless, I found the general perspective on the dynamic, interactive nature of language and community very valuable in integrating a range of social, cultural, and historical characteristics of the communities under study and relating them to a range of observed linguistic features.

A specific theoretical model, however, remained elusive. As mentioned above, Haugen used the term 'ecology of language' rather ambiguously. This is not surprising: when a really rich idea first appears, it tends to lack clarity: it points in too many directions at once. But if, as he proposed, language ecology was to become a 'scientific study in its own right', the ecology metaphor needed to be clarified and systematized. As I attempted to do that, however, it became clear that the metaphor does not quite hang together. As I said earlier, the problem lay in thinking of ecology as a metaphor. In terms of metaphor theory (Kövecses 2002), the terms of the source domain (biological ecology) cannot be properly mapped on to those of the target domain (language as a social phenomenon).

In what ways did Haugen think ecology could be a useful metaphor within linguistics? He saw ecology as consisting of three

elements: (1) an organism, (2) its environment, and (3) the process that connects them (their interaction).

In biology it is possible to describe the nature of an organism, such as an animal or plant, in terms of its physical and genetic makeup. It is also possible to describe the nature of the environment: the topography, climate, flora and fauna, and so on. The life history of any particular organism arises from the interaction of the two. A cat in the wild, having to find and fight for food every day of its life, is quite a different animal in physical appearance, personality (if we can use this term), and behaviour from a well-fed pet cat. In turn, the environment in which each cat lives is affected by that cat. For example, the wild cat kills other animals, alters the vegetation to some extent, and so on; the house within which the pet cat lives is affected by its presence, as are the lives of its owners. The differences are determined by the interactions between each cat and its environment.

Haugen proposed that language could be thought of as an organism, and its community as the environment. The task of linguists was to describe the characteristics of the two entities and to show how the interaction between them gives rise to different. How valid was this claim?

Haugen argued, quite rightly, that there is a long in language study of treating language metaphorically *as if it were* a living organism. Terms like the 'birth' and 'death' of languages, 'language family trees', and so on, attest to this. Scholars did not, of course, assume that language actually is an organism, but found it helpful to liken it to one. The problem with the ecology metaphor, however, lies in how we view the environment. This, Haugen says, is not a metaphor:

the *true* environment of a language is the society that uses it (329; italics added).

This environment, he says, comprises two components: the psychological and the sociological. These two overlap at many points, but in general they can be understood as follows. The *psychological* component is concerned with the language as it exists in the mind of the speaker: his or her use of the language to make sense of the self and the world; its interaction with other languages in the mind; and the speaker's attitudes towards the language. The *sociological* component is concerned with the language as it exists within the speech community: how it is used between people. It includes the where, when, and why a language is used and not used, and how these are related to the patterns of the speakers' social behaviour. In other words, there is an actual (and not a metaphorical) relationship between community and language.

This is the conceptual problem at the heart of Haugen's idea. On the one hand there is a metaphorical entity: 'language-as-organism', and on the other, a literal entity: what we might call 'environment-as-itself'. Where does that leave the ontological status of the third element (interaction)? If the interaction is a literal process, how can one describe an interaction between a metaphorical entity and a real entity? What specifically happens in the language-community interaction, and what are the mechanisms by which it takes place? It is relatively straightforward to show how the characteristics of a community (its history, sociology, demography, cultural values, religion, and so on) influence the language use. But is the influence mutual: in other words, ecological? If so, it would imply that communities are affected by the languages they speak. To an extent, this is the claim made by the 'Sapir-Whorf hypothesis' (Whorf 1956), but the hypothesis is limited to questions of psychology: an individual speaker's perception is guided (or determined) by the particular language he or she speaks. There is little stress on the sort of communal

behaviour Haugen was interested in. In any case, the Sapir-Whorf hypothesis has been hotly debated for half a century, and conclusive evidence either for or against it has proved very difficult to find.

This leaves the object of study of the proposed discipline of language ecology undefined, a problem that Haugen seemed unaware of. This is clear from his suggestion that linguistics could make a major contribution to the discipline of 'human ecology':

Language ecology would be a natural extension of this kind of study [i.e., human ecology], and has long been pursued under such names as psycholinguistics, ethnolinguistics, linguistic anthropology, sociolinguistics, and the sociology of language (Haugen, 1972: 327).

The human ecology school of sociology, centred on the University of Chicago, studied patterns of urban human settlement. Human ecologists saw that a city is the 'natural' environment within which urban humans live. This led to a deeper understanding of the effect of the built environment on human social behaviour. In other words, human ecology is a literal application of biological ecology. Human beings are, *in fact*, organisms (even if organisms of a special kind), and they interact with their physical environment just as all organisms do. Of course this interaction is more complex than, for example, that between a cat and the wild. The environment for humans is complex, as it comprises both man-made and natural environments, and interactions with them are mediated by a range of cultural values and psychological processes that are not present in the cat. Nonetheless, human ecology is not a metaphor.

Haugen's language ecology, by contrast, involves a metaphor, and an incomplete metaphor at that. As a result, the re-

mainder of his article is devoted to discussing social influences on language. Neither language-as-organism nor ecological interaction is examined further. He concludes it with a taxonomy of some social aspects of language, with no attempt to integrate them theoretically.

So, although Haugen hinted that the ecology of language could go beyond being merely 'a descriptive science' and become a 'predictive and even therapeutic' science, in reality he could go no farther than using it to describe various strands within the language sciences. This can help to encourage the cross-fertilization of ideas, but it does not provide a theoretical framework that integrates them. We cannot blame Haugen for this: the idea of applying ecological thinking beyond biology was in his time more or less unknown. He was right to recognize that there is something inherently ecological about language, but we have the opportunity now to do re-examine his original suggestion in the light of later developments.

3. A Non-metaphorical Language Ecology

The modern ecological movement is based on the conviction that it is only by adopting this cast of mind that humanity can truly understand the world and save itself from an impending catastrophe. Thus, a philosophical movement has grown out of biological ecology, and ecological thinking has begun to be applied in many fields far beyond its origins. Language ecology can, I believe, contribute to linguistic theory, but only if we apply ecological philosophy to the description and explanation of language. Though ecological philosophy has many versions, which go by various names, it can be characterized by four common features. Interestingly, these features can be discerned in the very first formulation of ecology in 1866 by the biologist Haeckel:

the totality of relations of organisms with the external world in general, with the organic conditions of existence; what we have called the economy of nature, the mutual relations of all the organisms which live in a single location, their adaptation to the environment around them, the transformations produced by their struggle for existence (quoted in Hayward, 1995: 26).

Thus, ecological thinking is concerned with phenomena that are:

- 1) holistic ('the totality of relations ...');
- 2) dynamic ('the transformations produced by their struggle for existence');
- 3) interactive ('the mutual relations of all the organisms');
- 4) situated ('relations with the external world'; 'organisms [...] in a single location').

Let us look more closely at these characteristics in terms of what they imply for an ecological understanding of language.

3.1 Holistic

The philosopher Hayward (1995) contrasts ecological thinking with so-called 'Enlightenment' thinking, based on empirical natural science, which has predominated in Western thought since the eighteenth century. Enlightenment thinking is an analytical approach to learning:

Modern classical science works with an atomistic materialistic ontology; this ontology is also reductive, implying that any composite body is ontologically reducible to its simple constituents; and mechanistic [...] This metaphysics has also informed the view of living nature as, in effect, an elaborate machine (Hayward, 1995: 29).

As formulated by Saussure (n.d. [1916]), linguistics was to operate along the

lines of classical science, in two ways. First, the task was to isolate language, as the object of study, from all non-linguistic considerations, including the community of speakers. Secondly, it was to identify the entities that make up language (its phonemes, morphemes, lexemes, and so on) and formulate the rules that govern their relationships in any given language.

Ecological thinking is concerned with complex wholes and systems. There are different opinions about what these wholes and systems are and how they might be best understood. Nonetheless, ecological thinkers agree that it is only through understanding complexity, diversity, and interrelationship—rather than entities in isolation—that we can properly understand our world.

In a linguistics informed by an ecological view, language arises from the complex interaction of community, culture, and communication. Language exists because people communicate, in real situations. Every instance of language is language in use, and is *in principle* inseparable from its use in the particular situation. The individual linguistic elements and the rules governing their combination are of no significance in themselves, but only insofar as they are manifestations of the whole communicative process (Halliday, 1994). This sort of linguistics attempts to understand the nature and workings of language by studying meaningful human interactions, characterized by diversity, variation, and complex wholes.

3.2 Dynamic

Classical scientific thinking led to the view of nature as a machine, with well-defined and unchangeable parts working along constantly repeated and predictable lines. By contrast, in an ecological perspective the parts are fluid, with changing characteristics and identities, which are 'systematically integrated [to one another] and mutually defining' (Hayward

1995 p. 29). In other words, it is the dynamism of the system that determines the nature of any part at the time it is being observed. A significant justification of this view is given by developments within modern physics, for long the benchmark of scientific thought, which is increasingly concerned with variability in entities and the unpredictability of much of the universe (see, for example, Dupré 1995; Ladyman 2002, esp. part II). Each particular situation is, in this view, unique and differs, even if only slightly, from every other situation involving the 'same' parts.

As applied to language, the principle of dynamism means that we treat each utterance as in an important sense unique. The traditional and commonsense view of linguistic communication is that a speaker wishes to express a particular meaning, consequently chooses from the words of the language, applies the rules for combining them, and thus creates the utterance for expressing that meaning. This is a very misleading picture. In every interaction, the nature of the utterance is determined by a hundred and one factors: the physical setting as the participants perceive it; the participants and their perceptions of one another; the means other than language that are available; the perceived intention of the communication; and so on. As well as selecting words from the vocabulary available, speakers constantly 'misuse' and invent words, 'break the rules' of morphology and syntax, and integrate linguistic and non-linguistic elements into a seamless communicative act.

Language is very repetitive: people say the same things over and over again. We can often predict what a person will say if we know enough about the situation. This repetitiveness has been taken as evidence that the language is following a set of rules. However, if we assume that people are motivated by ease and efficiency in understanding one another rather than by an in-

ner drive to follow abstract rules, the repeated patterning of language appears in a different light.

Patterning makes communication easier and more efficient by reducing the effort required by the speaker in choosing what to say, and by the hearer in predicting what is coming next. Patterns are habit-governed behaviour: they are manifestations of the natural tendency for all organisms to do what they have done before. Unlike rule-generated behaviour, patterns are inherently changeable—in fact, no two patterns are ever exactly alike. Every situation is inherently dynamic, and there is always a potential unpredictability in every interaction. I refer to this dynamic unpredictability as ‘creativity’ (which is rather different from Chomsky’s use of the term [1968, 1976]). Both predictability and creativity in patterning are fundamental ecological principles of language.

3.3 Interactive

A dynamic system is self-evidently a system characterized by interactions. One of the implications of Haugen’s proposal was that the focus of linguistics, as in ecological biology, should be on interaction itself. A biologist who wants to understand how and why an organism is affected by its interactions with its environment examines the nature of the interaction itself. Is it, for example, extended or brief; one-off or continual; voluntary or unavoidable; hostile or amicable; solitary or in company (and, if so, in company with what)? The answers to questions like these are essential to understanding the system as a dynamic whole, as well as the characteristics of the entities within it.

Haugen’s discussion of language ecology centres on language and community as separate entities, each of which he treats as an object of study. The ‘ten questions’ he poses at the end of his article are

concerned with how social factors influence language forms and usage. A more appropriately ecological approach is to study the nature of the interaction.

Language is a fundamental aspect—but only one aspect—of human sociality. From the very beginnings of language in human pre-history, its nature has been determined by interaction. Every other function, such as private monologue, verbal thinking, or (in writing) personal diaries, is derived from this. Linguists sometimes give the impression (and a few even explicitly state) that interaction is irrelevant, or at the most incidental, to understanding language itself. There is among contemporary linguists much more interest in language use—for example, in discourse analysis, socio-linguistics, and pragmatics. Nonetheless, for centuries the study of language has been so occupied with linguistic elements such as words and rules of syntax and morphology, that they have been treated as if they had inherent meanings, and using the language is merely a matter of following the rules. The implication is that language exists for the purpose of creating well-formed sentences, and conversely that a well-formed sentence will be automatically meaningful. This view still persists in some linguistic theories.

From an ecological perspective, language exists because people need to interact. It is a vital and by far the most significant aspect of our interaction, and in almost all instances interaction would be impossible (or at least very constrained) without language. But interpersonal interactions comprise much more than the linguistic element within them. Because of this, the form any language takes depends on the particular interaction of which it is a part, which provides the environment for the language being used. We need to consider, therefore, within that environment, also the interplay and mutual determination between its linguistic and non-linguistic features. The language interacts with all of the non-verbal

aspects—eye contact, facial expressions, bodily posture, gestures, and the like—as well as with the participants' perceptions and assumptions about themselves and one another, and the physical, social, and cultural setting. All of these, and more, work together to create the complex whole which is the interaction.

3.4 Situated

The concern of ecological thought with situation arises from, and summarizes, all of the foregoing. To say that a phenomenon is situated is to say more than everything has to be somewhere. It implies that whatever we are interested in understanding, whether it be a physical object like an organism or something intangible like an idea or a feeling, occurs in a setting, and that the setting is an important part of the phenomenon. It should be clear from what has been said so far that situation is more than the physical location. Indeed, Haugen excluded the physical environment from his discussion, but it has a role to play in the ecology of language (Sapir, 1949, is an enlightening but rather narrowly focussed discussion of this role).

The holistic, dynamic, and interactive focus of ecological thought means that we regard the situation as an integral part of language. It is helpful sometimes temporarily to 'remove' language from the situation, as it were, in order to examine it more closely. Unlike much traditional linguistics, however, an ecological linguistics will 'put it back' into the situation, in order to understand it as part of the whole system of interaction. Otherwise, we are left with only a part of the picture.

A rough analogy may make the point clearer. If you wanted to describe a football match, it would not do to describe the players, playing conditions, and ball, and perhaps summarize the rules of the game. All of those elements are essential to making it football, but they do not constitute *the*

match. The match is the continually changing process by which all of those elements (and, of course others) interact for a specified period of time. A manager may analyse what an individual player did, for example, by counting how many of his (or her) passes reached their intended target, but a full appreciation of his performance can be achieved only in the light of the whole situation. The manager will need to take into account such things as what other players, both team-mates and opponents, were doing at the time, the state of the game, the pitch conditions, and so on. Subsequently, at practice, the player may be given a lot of training drills to improve his passing skills, but until they are successfully tested in another match, they cannot be said to have improved.

In the same way, to treat language as an abstract system that exists independently of its setting misses the main point. It may tell us a certain amount about some theoretical principles that can be applied to language, but little about language as we actually experience and use it:

To separate languaging from the particularity of its context is to obscure its being' (Becker, 1991: 232).

4. Conclusion

Language ecology has not lived up to the promise of the original proposal by Haugen. It has remained a marginal and ill-defined approach, mainly in the study of multilingual societies. Adopting an ecological philosophy of language, however, offers richer possibilities for advancing the study of language than simply employing ecology as a metaphor.

Language is part of the complex of human behaviour, and like all other aspects of behaviour, it comprises patterns that are learned through interaction within a community of users. Continuous patterning on many levels

gives us humans the capacity to recognize and interpret the patterns of our own and others' behaviour. Any one action is meaningful only in the context of the totality of behaviour; the patterning of language is meaningful only in the context of the patterning of the totality of communicative behaviour.

All of these patterns rely on constant repetition, and predictability is one of their essential characteristics. The formulaic, or predictable quality of all communicative behaviour, including language, is essential for continuity of communication, culture, and community. Without it, meaning would be impossible. One concern of the ecology of language is with an understanding of the processes of patterning themselves, and how they relate to the situation of use. Patterns are general regularities, which can be varied, however slightly, with every repetition. The traditional concern of linguistics is with grammars, or sets of abstract rules, that are said to underlie every instance of language, is superseded in an ecological approach by an interest in the ways in which patterning of language and all behaviour serves to make it meaningful.

Linguistics has long been successfully established as an independent, discipline. So much so, that other disciplines that also have an interest in meaningful human behaviour (such as sociology, psychology, and anthropology) occasionally describe aspects of behaviour by analogy with the rules formulated by linguistics (see for example Giddens, 1984).

An ecological view, as we shall see, goes farther than simply seeing parallels between different sorts of behaviour. It suggests that all meaningful behaviours, whether 'linguistic' or 'non-linguistic', are manifestations of the same processes. They can therefore most profitably be studied in the same way. This is not

to say that all of these different disciplines are in fact the same, but that each has a great deal to contribute to the others. Culture, continuity, and change are most gainfully studied, not as linguistic phenomena in the narrow sense, but as ecological processes within the broad and multi-disciplinary study of human sociality. Such an approach to the human sciences is a deeply ecological concept.

In defining itself as a 'scientific' enterprise, linguistics has adopted the atomistic, reductionist, and mechanistic approach of Enlightenment empirical science. Language has been abstracted from its situations of use and from its communities of users. Much progress has been made in understanding language through this approach, but much has also been ignored or defined as outside the scope of the discipline. In a short article like this, there is no space to develop the implications of an ecological view for the future directions of linguistics; a more detailed treatment can be found in Garner (2004). Language ecology does, however, promise to fulfil the wish for the sort of 'new' linguistics that the Spanish social theorist, Ortega y Gasset, expressed more than four decades ago:

For quite a number of years now I have been asking for a linguistics that should have the courage to study language in its integral reality, as it is when it is actual living discourse, and not as a mere fragment amputated from its complete configuration. [...] But it is obvious that linguistics has not [...] come to know *language* except as a first approximation, because what it calls 'language' really has no existence, it is a utopian and artificial image constructed by linguistics itself (Ortega y Gasset, 1963: 241-2).

BIBLIOGRAPHY

- Barron, C., Bruce, N., and Nunn, D. 2000. 'Introduction' *Knowledge and Discourse: Towards an Ecology of Language*. Harlow: Pearson Education pp. 1-12.
- Crystal, D. 1990. *Linguistics*. Harmondworth: Penguin.
- Dupré J. 1995. *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*. Cambridge, Mass: Harvard University Press.
- Garner, M. 1986. "The Swedish and Russian Speech Communities in Melbourne in the Context of Developing a Theory of the Ecology of Language" unpublished PhD thesis, University of Melbourne.
- _____. 1988. "Ethnic languages in two small communities: Swedish and Russian in Melbourne", *International Journal of the Sociology of Language*, 72: 37-50.
- _____. 2004. *Language: An Ecological View*. Oxford: Peter Lang.
- Giddens, A. 1984. *The Constitution of Society*. Cambridge: Polity Press.
- Haarmann, H. *Language in Ethnicity: A View of Basic Ecological Relations*, Berlin 1986 Mouton de Gruyter.
- Halliday, M. 1994. *Language as Social Semiotic*. New York: Chapman and Hall.
- Haugen, E. 1972. "The Ecology of Language", in Dil, A. S. (ed) *The Ecology of Language: Essays by Einar Haugen*, Stanford: Stanford University Press.
- Hayward, T. 1995. *Ecological Thought: An Introduction*. Cambridge: Polity Press.
- Kövecses, 2002. *Metaphor: A Practical Introduction*. New York: Oxford University Press.
- Ladyman, J. 2002. *Understanding the Philosophy of Science* London: Routledge.
- Mackey, W. 1980. "The Ecology of Language Shift", in *The Ecolinguistics Reader*, (edited by A. Fill and P. Mühlhäusler) 2001. London: Continuum: 67-74.
- Mühlhäusler, P. 1996. *Linguistic Ecology. Linguistic Change and Language Imperialism in the Pacific Region*. London: Routledge.
- Nelde, P. 1989. "Ecological aspects of language contact or how to investigate linguistic minorities" in *Journal of Multilingual and Multicultural Development* 10/1: 73-86.
- Ortega y Gasset, J. 1963 *Man and People*. New York: Norton.
- Sapir, E. 1949. *Selected Writings of Edward Sapir*. (ed. D. Mandelbaum) Berkeley: University of California Press.
- de Saussure, F. no date [1916]. *Course in General Linguistics* (trans. Wade Baskin) London: Peter Owen.

Whorf, B. 1956. *Language, Thought and Reality: Selected Writings of Benjamin Lee Whorf* (edited by J. Carroll) Cambridge, Mass: Technology Press of MIT.

Wijayanto, A. 2005. "An Ecolinguistic Perspective on the Languages Used by a Javanese in Banjarmasin-South Kalimantan (a case study)" in *Kajian Linguistik dan Sastra* 15/29 : 80-92.