

Part I

Introduction and Theoretical Frame

1 Linguistic Ecology and Language Contact: Conceptual Evolution, Interrelatedness, and Parameters

Ralph Ludwig, Peter Mühlhäusler, and Steve Pagel

1.1 Linguistic Ecology: an Outline

1.1.1 *From οίκος to Ecology*

As is the case with most abstract concepts, the concept of *ecology* is essentially rooted in a metaphor, linking the respective referent to a concrete and, in this case, rather modern object. The word *ecology* is a composition of the Greek lexemes *οίκος* ‘house’, ‘household’, or ‘home’, and *λόγος*, which covers a series of meanings, the most common ones being ‘word’, ‘speech’, ‘discourse’, ‘reason’, and ‘principle of order’. The suffixed form of the latter, *-λογία*, is best translated as ‘the study of’. Literally, therefore, *ecology* is ‘the study of (the governing principles of) the household’. We note the shared morpheme *eco-* in both *economy* and *ecology* as well as the ongoing debate on whether these are opposing principles (as argued by Weinrich 1990) or whether both areas of study are concerned with the optimal use of limited means. The far greater number of parameters introduced by ecological studies distinguishes them from an economic interpretation.

The ecology metaphor, as we will see, was first used in biology in order to describe a radically new way of understanding nature, where organisms interact with one another and their environment. When it was adapted to the concept of *language*, it was seemingly just another metaphor that linguistics had copied from the natural sciences in order to find a fitting approach to its exceptionally abstract subject. And, just like other metaphorical concepts, the ecology metaphor (in which languages are interconnected with all kinds of production of meaning) will have to prove its value in the course of time. Still, other metaphorical concepts are in use and are, in part, expedient conceptions, such as the organism metaphor (languages are living things which come to life, compete, age, and die), the instrument metaphor (languages are instruments, tools, means of communication), or the system metaphor (languages are more or less closed bodies of interconnected and interdependent data, each constituting a system of its own). As the

ecological approach in linguistics allows a considerably larger range of parameters underlying language structure and use, it is potentially more powerful than system-oriented approaches, which are poorer in parameters – assuming it is possible to make the numerous additional parameters do explanatory work.

Metaphors, as well as metonyms, are vital for all living languages because, to begin with, they provide a linguistic solution to the problem of communicating about immaterial and imagined referents and about processes occurring beyond the immediate experiences of the speaker. Metaphors also privilege certain perceptions and actions and, when employed heuristically, enable their users to overcome cognitive constraints. These insights range among the most important ones the study of language has achieved in the last century (e. g. Ortony 1979; Lakoff and Johnson 1980; Rorty 1989; Goatly 1996/2001) and they can certainly be called ecological, as they are based on the assumption that there are far-reaching interconnections between a language, the society that speaks it, and the physical environment in which this society evolves. Furthermore, the theoretical implications are enormous: in different languages metaphors may be rooted in different concepts (Mühlhäusler 1995b), thought by the speaking community to be the best fitting, and different languages may thus provide their speakers with different approaches to the world, which, in turn, may result in different ways of dealing with this world. Conversely, languages that spread to remote parts of the world, particularly during colonial expansions, may contain metaphors that are, at first, inappropriate for managing their new ecologies¹ and must adapt to them.

Metaphors do not only determine and constrain human perceptions; they can also be employed heuristically to explore the unknown. In the absence of immaculate perception, any research that extends the boundaries of necessary knowledge relies on metaphors (Harré 1961; Paprotte and Dirven 1985). In the history of linguistics there have been numerous heuristic metaphors, including the family tree of language genetic relationships, the conduit metaphor of communication (Reddy 1979), the stratum metaphor of language mixing, linguistic drift, and the pervasive reification/objectification metaphor, which converts dynamic processes into a static object called *language*. It has been said that metaphors never reveal the full truth but selectively highlight small aspects of it. At times they may conceal key

¹ We use the term *ecology* in two different meanings. The first is in accordance with the etymology of Greek *logos/logia*, as the ‘study of’ or a certain perspective of research (e.g. *the ecological parameters*). The second designates the object (ecology) that can be grasped through the ecological perspective (e.g. *the Levant ecology*). Mufwene and Vigouroux (2012) use *ecology* in a similar fashion. See also Lechevrel (2010: 46ff.) who identifies and discusses five different ways of designating ecological approaches in linguistics.

properties of the subject matter, such as when the reification metaphor of language conceals the dynamic, open-ended nature of human communication. It becomes clear that metaphors have their serious pitfalls, and linguists cannot be too cautious when dealing with them. The ecology metaphor, we would like to argue, is by contrast capable of highlighting the dynamics, interrelatedness, and situatedness of human communication and therefore promises to capture its essential properties.

In order to achieve an accurate understanding of the ecology metaphor, it is, therefore, helpful to have a closer look at the semantics of the Greek word *oikos* and especially the aspects that distinguish it from that of modern houses and households. The latter can be described as corresponding (concretely) to the concepts of *nuclear family*, *couple* or even the *individual*, i.e. private spheres of the rather unmarked social entities of modern western civilization, settled in an otherwise (e.g. socially, economically and politically) heavily interconnected and interdependent society. Modern houses and households are by no means self-sufficient. On a social level they depend on family (nuclear as well as extended) and circles of friends. Economically they are highly dependent on production facilities, markets, and money, and politically they are bound to external decisions such as laws and taxes. The *oikos* of ancient Greece, in contrast, was not only a key social entity but also a key economic and, to a more limited extent, a key political entity. It comprised the extended family, all kinds of property including land, livestock, and personnel; and life in it was ruled, for the most part, by decisions made and supervised by the host. Socially and politically, but especially economically speaking, the *oikos* was thus largely self-sufficient. In order to be so, the individuals living in it were tightly interconnected in terms of social rank and profession and highly interdependent in both a social and economic way. We must grasp this dimension when aiming for a thorough understanding of the origin and meaning of the ecology metaphor and its application to other fields such as linguistics.

The first ecological approaches to nature date back at least to scientists of the eighteenth and nineteenth centuries, such as Carl von Linné, the founder of modern botanical and zoological taxonomy, Alexander von Humboldt, and of course Charles Darwin. The term *ecology*, however, was first used and defined in 1866 by the German zoologist Ernst Haeckel, himself a great admirer of Darwin's theory (Stauffer 1957). Haeckel places the Darwinian key concepts *economy of nature* and *struggle for life* in a new science called *Oecologie* (Birch and Cobb 1981: 29):

Unter Oecologie verstehen wir die gesamte Wissenschaft von den Beziehungen des Organismus zur umgebenden Außenwelt, wohin wir im weiteren Sinne alle 'Existenz-Bedingungen' rechnen können. Diese sind teils organischer, teils anorganischer

Natur; sowohl diese als jene sind ... von der grössten Bedeutung für die Form der Organismen, weil sie dieselbe zwingen, sich ihnen anzupassen.² Zu den anorganischen Existenz-Bedingungen, welchen sich jeder Organismus anpassen muss, gehören zunächst die physikalischen und chemischen Eigenschaften seines Wohnortes, das Klima (Licht, Wärme, Feuchtigkeits- und Electricitäts-Verhältnisse der Atmosphäre), die anorganischen Nahrungsmittel, Beschaffenheit des Wassers und des Bodens etc.

Als organische Existenz-Bedingungen betrachten wir die sämtlichen Verhältnisse des Organismus zu allen übrigen Organismen, mit denen er in Berührung kommt, und von denen die meisten entweder zu seinem Nutzen oder zu seinem Schaden beitragen. Jeder Organismus hat unter den übrigen Freunde und Feinde, solche, welche seine Existenz begünstigen und solche, welche sie beeinträchtigen. (Haeckel 1866: 236)

[By ecology, we mean the whole science of the relations of the organism to the environment including, in the broad sense, all the 'conditions of existence'. These are partly organic, partly inorganic in nature; both ... are of the greatest significance for the form of organisms, for they force them to become adapted. Among the inorganic conditions of existence to which every organism must adapt itself belong, first of all, the physical and chemical properties of its habitat, the climate (light, warmth, atmospheric conditions of humidity and electricity), the inorganic nutrients, nature of the water and of the soil, etc.

As organic conditions of existence we consider the entire relations of the organism to all other organisms with which it comes into contact, and of which most contribute either to its advantage or its harm. Each organism has among the other organisms its friends and its enemies, those which favor its existence and those which harm it. (translation by Stauffer 1957: 140–141)]

Ecology in the modern sense of the word developed as a natural science in its own right in the first half of the twentieth century. One of the typical modern definitions is essentially similar to Haeckel's one and a half century ago:

Ecology is the scientific study of the distribution and abundance of organisms and the interactions that determine distribution and abundance. (Begon, Townsend and Harper 2006: xi)

The first application of the ecology metaphor in a theoretical linguistic context is usually attributed to Haugen and his 1972 paper 'The ecology of language'. Prior uses of the term *ecology* by Goffman (1964) and Voegelin, Voegelin and Schutz (1967) didn't refer to the same general level but focused on immediate communicational encounters in the first and, as Haugen himself recognizes (1972: 327ff.), on bi- and multilingual societies in the latter case. Haugen defines the ecology of language as 'the study of interactions between any given language and its environment' (1972: 325). In contrast to other authors before (and after) him dealing with ecological linguistic features, such as the relationship between language, thought and reality, his definition of *environment* does not cover 'the referential world to which

² The adaptation of languages to wider ecological conditions has become a recurring theme in present-day ecological linguistics (see Mühlhäusler 1996b, 2003).

language provides an index' (1972: 325). In fact, Haugen considers the 'true environment of a language' primarily as the society using the language, although he also contemplates a series of multilingual, social and psychological societal facets.³ At the end of his paper, Haugen provides a preliminary list of ten questions which, in his opinion, could shed light on the ecology of a given language. They regard, for instance, the typological classification of a language, the nature of its users, the latter's attitudes towards the language, concurrent languages, internal variation, domains of use, and written traditions. These questions have not lost any of their relevance, especially when it comes to the study of language contact phenomena, which is why they will, in part, play a role in the contributions to this volume too. For the most part, these questions touch issues we could also call sociolinguistic – and most of them probably are. But the sociolinguistic question, as will be pointed out later, is just one element among others in an ecological linguistic approach. In Haugen's concept of the study of a language's ecology, the scope of these questions already goes well beyond sociolinguistics. This is the case, for example, for the notion that phenomena such as language contact and bilingualism appear to be natural elements of most (if not all) linguistic ecologies, and not exceptional matters, as they had been treated by mainstream linguistics of the time. When Haugen himself addresses some of these contact-related processes in his paper (such as diglossia, bilingualism, creolization, and borrowing), he does not give an entirely new or coherent perspective but opens fascinating paths to an integral conception of language(s) and speaker(s).

1.1.2 *Streams of Development*

Following Haugen, in the 1980s and 1990s a group of linguists from rather different fields developed and refined what we would today call *ecolinguistics*. Fill (1998/2001: 43) distinguishes two – ultimately complementary – directions of this discipline that emerged from the primarily sociolinguistic impetus of Haugen.⁴ A first approach interprets Haugen in a closer sense: *ecology* is primarily understood as a metaphor and is transferred to languages and their speaking communities, since it does more justice to the complexity of the

³ It should be noted that Haugen, while proposing a dynamic metaphor of language ecology nevertheless subscribes to the static reification metaphor of a *given language*. He also supports the idea of the separation of languages and their environment rather than exploring the notion that the boundary between language and non-language is ultimately arbitrary. As an attempt to do justice to the latter notion, ecolinguists such as, e.g., Trampe (1990, 1991) and Fill, Penz and Trampe (2002) speak of the *Mitwelt* ('world with') of language rather than of its *Umwelt* ('world around').

⁴ A clear-cut summary of the development of ecological approaches in linguistics is given in Mufwene and Vigouroux (2012). For a detailed and critical survey of ecological approaches in the social sciences and particularly linguistics, see Lechevrel (2010).

situation than other metaphors do (e.g. the computing or the organism metaphor). The notion of *ecology* has a rather methodological meaning here and lacks the evolutionary correlation it has in biology. In a second approach, ecology is interpreted as including the referential world in a more biological (and thus evolutionary) sense. This approach points out that language is inescapably linked with and part of the world. It explores the role of language in environmental and social problems such as climate change, the extinction of species (and here one can include the linguistic variety: languages/language diversity), classism and sexism, and furthermore reflects on possibilities of (linguistic) intervention.

This is a useful, but of course also a simplifying distinction. Some more complex models include aspects of both currents, such as the one proposed by Salikoko Mufwene (2001, 2008), discussed below. All ecological linguistic approaches also owe a considerable portion of their insights to scientific roots other than Haugen, especially the so-called *linguistic relativism/constructivism* or *Sapir–Whorf theory complex*, which comprises two logically independent hypotheses:

- languages encode different cultural and cognitive categories and can vary in an indefinite number of ways; and
- languages shape their speakers' world-view and other non-linguistic behaviour.⁵

Both hypotheses can be called ecological as they regard languages, their speakers' environment, and their speakers' world-view as being substantially interconnected. This conception of language is strongly tied to the names of Franz Boas, Edward Sapir, and Benjamin Lee Whorf who, at the beginning of the twentieth century and by studying Native American languages and comparing them to what Whorf called SAE (Standard Average European) languages, arrived at conclusions such as the following:

Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the 'real world' is to a large extent

⁵ It is useful to distinguish between a stronger and a weaker form of this hypothesis. The stronger version claims that language determines thought and behaviour, and is rejected by most linguists today. A weaker version assumes that language exerts some influence on cognitive and other non-linguistic behaviour, and is widely, though not universally, accepted. In recent years, the Amazonian language Pirahã has become a challenging case with regard to this hypothesis (for a discussion see Everett 2005, 2008, 2009; Frank, Everett, Fedorenko and Gibson 2008; Nevins, Pesetsky and Rodrigues 2009a, 2009b).

unconsciously built up on the language habits of the group . . . We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation. (Sapir 1929: 209ff.)

We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds – and this means largely by the linguistic systems in our minds. (Whorf 1940/1956: 213)

We are thus introduced to a new principle of relativity, which holds that all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated . . . The relativity of all conceptual systems, ours included, and their dependence upon language stand revealed. (Whorf 1940/1956: 214)

Some ecolinguists, especially those engaged in a critique of Western languages and in ecocritical discourse analysis do indeed make reference to Sapir and Whorf (e.g. Chawla 2001). However, as Mühlhäusler (2000a: 90) points out, these names are often introduced as a means of demonstrating the legitimate roots of ecolinguistics rather than as a serious effort to develop the theories of linguistic relativity and determinism.

It is also necessary to point to the fact that Sapir and Whorf have important precursors in Wilhelm von Humboldt and especially in Johann Gottfried Herder.⁶ In his ‘Fragments on recent German literature’ (1767), Herder considers language not only a tool or instrument for human beings to express their thoughts, but also the content and even the form of human cognition (Herder 2005: 102) – an idea of far-reaching consequences:

If it is true that we cannot think without thoughts, and learn to think through words, then language sets limits and outline for the whole of human cognition.

We think in language, whether we are explaining what is present or seeking what is not yet present. In the first case we transform perceptible sounds into intelligible words and intelligible words into clear concepts. Hence a matter can be dissected for as long as there are words for its component concepts, and an idea can be explained for as long as new connections of words set it in a clearer light. (Herder 2002: 49)

⁶ It is important to note, however, that these ideas have a long history in Western philosophy. It spans, to name only a few examples, from Plato’s ‘Allegory of the cave’ in the *Politeia* to the epistemological investigations of George Berkeley (‘A treatise concerning the principles of human knowledge’, where the essence of ideas is said to be their being perceived [§3] and the nature of human knowledge is reduced to ideas and spirits, but not matter [§86]) to the structuralism of Ferdinand de Saussure (according to whom linguistic signs constitute an autonomous system in which the relation between these signs determines their meaning; therefore: ‘La langue est un système dont tous les termes sont solidaires et où la valeur de l’un ne résulte que de la présence simultanée des autres,’ Saussure 1915/1986: 159). See also Toulmin (1972) who gives a functional interpretation of the dichotomy *relativism* vs. *universalism/absolutism* in Western thought (see section 1.2.2).

Proceeding from the general to the more particular, Herder asks: What does it mean for the ‘nature’ of a ‘national language’ (*Nationalsprache*) if it is a tool of the organs of its people, a content of their ‘world of thoughts’ (*Gedankenwelt*), and a form of their kind (2002: 102–103)? The answer is clear for Herder and fits in with a central thought expressed in his treatise ‘The origin of language’ (1772), according to which human language has no divine origin:⁷

[E]ach nation speaks in accordance with its thought and thinks in accordance with its speech. However different was the viewpoint from which the nation took cognizance of a matter, the nation named the matter. And since this was never the viewpoint of the Creator ... but was instead an external, one-sided viewpoint, this viewpoint got imported into the language at the same time too. (2002: 50)

For Herder, language is a ‘huge area’ (*Umfang*) of thoughts that have become visible, a limitless land of terms, coined by the centuries (2005: 94). Although the intimate relation between language and nation stated by Herder – and later Humboldt – was a prominent topic in the German national movement, their notion of *nation* should not be interpreted too narrowly here. It was a rather cosmopolitan conception, emphasizing the diversity of human history, thoughts, and speech, but by no means favouring one nation or language in principle over another. Its meaning is probably closer to that of the modern term *society* than that of the modern *nation*. Furthermore, Herder’s conception of *language* was all but static: he speaks of a ‘language becoming’ (*werdende Sprache*) that varies through all the educational levels of its speakers and changes through all its days of being created (2005: 103).

It was for Wilhelm von Humboldt to take up and cultivate many of Herder’s ideas. For Humboldt, language constitutes an ‘organic whole’ (*organisches Ganzes*) and is not as much a ‘product’ (*Werk*, Greek *εργον*) as it is a ‘practice’ or an ‘action’ (*Tätigkeit*, Greek *ενεργεια*, cf. Herder’s *werdende Sprache*). Expanding Herder’s thoughts concerning the heterogeneity of languages among nations and classes, Humboldt points to the relation between language and the individuals speaking it:⁸

⁷ It may be of some interest here that Edward Sapir (1907) wrote an essay on Herder’s treatise.

⁸ In his essay ‘On the different methods of translating’ (1813), Friedrich Schleiermacher ties in with both Herder’s and Humboldt’s ideas: ‘Every human being is, on the one hand, in the power of the language he speaks; he and his whole thinking are a product of it. He cannot, with complete certainty, think anything that lies outside the limits of language. The form of his concepts, the way and means of connecting them, is outlined for him through the language in which he is born and educated; intellect and imagination are bound by it. On the other hand, however, every freethinking and intellectually spontaneous human being also forms the language himself. For how else, but through these influences, would it have come to be and to grow from its first raw state to its more perfect formation in scholarship and art?’ (Schleiermacher 1813/1992: 38).

Nicht bloß, daß die Sprache selbst ein organisches Ganzes ist, so hängt sie auch mit der Individualität derer, die sie sprechen, so genau zusammen, daß dieser Zusammenhang schlechterdings nicht vernachlässigt werden darf. (Humboldt 1795/1830: 201)

[Not only that language is itself an organic whole, [but] this way it is connected with the individuality of those speaking it so closely, that this relation must not, by all means, be neglected. (our translation)]

In our own conception of linguistic ecology, which will be laid out in the next part of this chapter, we speak of several reference levels of ecology (e.g. speaker, speaker group, and speech community) and tie in with these ideas of Herder and Humboldt.

In an often-quoted passage from his essay ‘On the comparative study of language and its relation to the different periods of language development’ (1820), Humboldt underlines what Herder had stated before him: ‘The differences between [languages] are not those of sounds and signs but ultimately of interpretations of the world’ (1820/1997: 18). Moreover, ‘[i]t is here that the reason for, and the ultimate purpose of all investigations into language are to be found’ (ibid.). For our conception of ecology we consider another passage of some importance, because it contains a clearer methodological formulation. In his introduction to ‘On the Kavi language in the island of Java’ (1836), Humboldt shows that the mutual interdependence of thought and language is more than just a metaphor for him: one element should be perfectly deducible from the other:

The *mental individuality* of a people and the *shape of its language* are so intimately fused with one another, that if one were given, the other would have to be completely derivable from it. For *intellectuality* and *language* allow and further only forms that are mutually congenial to one another. Language is, as it were, the outer appearance of the spirit of a people; the language is their spirit and the spirit their language; we can never think of them sufficiently as identical. (1836/1999: 46)

As Pagel (2018) shows in an extensive historical and scientific-theoretical work on the roots of contact linguistics, the scientific study of language contact phenomena begins in the last third of the nineteenth century. Here, an early offshoot of ‘ecological’ ideas can be found in William Whitney’s essay ‘On mixture in language’ (1881). Whitney is concerned with the question of whether ‘true’ language mixture – defined as grammatical mixture on more or less equal grounds – is theoretically possible. He also provides a simple but effective systematization of phenomena of contact-induced language change (see Pagel 2015) and emphasizes that contact-induced change is rather unpredictable because the parameters influencing it are manifold:

[W]herever two tongues come in contact, each is liable to borrow something from the other; and more or less, according to wholly indeterminable circumstances: the measure and nature of the intercourse, the resources of the respective tongues, their degree of facilitating kinship or structural accordance, and so forth. (Whitney 1881: 10)