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Historical Linguistics 1989

HISTORICAL LINGUISTICS 1989

PAPERS FROM THE
9TH INTERNATIONAL CONFERENCE
ON HISTORICAL LINGUISTICS
RUTGERS UNIVERSITY, 14-18 AUGUST 1989

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Foreword

The 9th International Conference on Historical Linguistics took place in New Brunswick, New Jersey, USA from August 14 to 18, 1989. The Conference was hosted by Rutgers, the State University of New Jersey and was organized with the assistance of the Office of the Dean of the Faculty of Arts and Sciences and the Department of Linguistics. ICHL 9 was attended by 141 linguists from 26 countries; 117 papers on a wide range of historical linguistic topics were delivered in parallel sections. The abstracts of papers presented at the Conference were submitted for assessment to a committee (Henning Andersen, Dorothy Disterheft, Marinel Gerritsen, Robert Jeffers, Jaap van Marle) prior to the Conference and the final decision as to which papers should be included in the program was based on the committee's recommendations.

The present volume contains a selection of papers read at the general sessions of ICHL 9. The Conference program also included two Special Topics Workshops: a workshop on Internal and External Factors in Syntactic Change organized by Marinel Gerritsen and Dieter Stein; and a workshop on Latin and the Romance Languages in the Middle Ages organized by Roger Wright. Papers from the two workshops have been published separately. The workshops significantly enhanced the Conference and I want to thank Marinel, Dieter and Roger for their gracious cooperation and for immense efforts expended on the mounting of these special sessions.

The success of ICHL 9 was due in large part to the extraordinary level of economic, practical and moral support that was provided by the Rutgers Administration and by many of my individual colleagues and associates at Rutgers. In particular, I want to acknowledge here the generous financial support of consecutive Deans of the Faculty of Arts and Sciences, Tilden Edelstein and Richard McCormick; Provost Paul Leath; James Reed, Dean of Rutgers College; James Johnson, University Director of International Programs; Carl Kirschner, Chair of the Department of Spanish and Portuguese; and my colleagues in the Department of Linguistics.

Countless individuals also gave selflessly of their time and energy to this project. Among them, Seth Gopin deserves special mention for lending his unique talents to the planning and implementation of the Conference's very successful Wednesday afternoon excursions to New York City. Two people, however, deserve the largest share of the credit for the professional and efficient management of ICHL 9. For more than a year, Jill Millerand and Jean Mecka labored energetically and intelligently on all aspects of the Conference. Their commitment to this project was total and enthusiastic, and far above the call of duty. They have earned my most sincere gratitude and my everlasting respect.

Jean Mecka deserves an additional expression of appreciation for her extraordinary contribution to the preparation of this volume. We confronted many unexpected technical problems in our attempts to prepare camera-ready copy for the publisher; Jean's tenacity, creativity and common sense in the effort to provide possible solutions to those problems was remarkable.

I must express my regrets here for the unfortunate delay in the appearance of this volume, a delay which was occasioned by the necessity for me to attend to calamitous occurrences in my personal life. I am most grateful to Henning Andersen for his role in bringing about the collaboration between me and Henk Aertsen that made possible the completion of this project this year. Henk's efforts over the past several months on behalf of the publication of this volume have been heroic. I owe him an enormous debt of gratitude, as do the volume's authors, for his expertise, his labor and his great generosity. Finally, I take this opportunity to express heartfelt thanks to the contributors to this volume for their exceptional patience and understanding.

Robert J. Jeffers
Rutgers University
October 1992

Just before the present volume went to press, I was informed of the passing away of my co-editor, Robert Jeffers. He wrote the above Foreword in October 1992 when we met in New York to discuss various editorial matters with regard to "our" book. Not very long after that meeting it became apparent that he had the same disease that had killed his partner a year earlier; in December he was hospitalized and on May 2, 1993, he died.

Robert Jeffers will be remembered by those who knew him as a fine Sanskritist and historical linguist, and he will live on in our memories through his publications, of which the present volume is the last. I dedicate this volume, the proceedings of the conference he organized, to his memory.

Henk Aertsen
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May 1993

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The Natural Science Background to the Development of Historical-Comparative Linguistics*

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0. Introductory Observations

Linguists talking today about matters concerning linguistic change make regular use of such terms as ‘assimilation’, ‘dissimilation’, ‘(sound) law’, ‘stem’, ‘structure’, and so on; they speak freely of ‘analysis’ when referring to their research and do not hesitate to resort to procedures of reconstruction where the data promise fruitful results in the explanation of historical events. I suspect that most linguists today are no longer conscious of the fact that these notions and methodological assumptions derive from the natural sciences. As someone interested in the history of linguistics it occurred to me that people who are working in that area of linguistic science which boasts the longest tradition, namely, in historical-comparative philology as it used to be called at least until the beginning of this century, should know, at least in rough outline, where many of their ideas and methodological tools have come from. As a result, this paper attempts to raise the awareness of the historical background to what scholars engaged in trying to explain language change are doing, and maybe it whets the appetite of some who want to know more about the subject.

Some ten years ago, the British historian of science Martin Rudwick noted the following about the desirability of investigating what he terms ‘creative analogies’ in the development of a field of research, especially in its formative stage:

It is at least arguable that major cognitive innovation is most likely to emerge in the scientific work of individuals who choose to employ analogies that [...] are strongly ‘external’: that is, analogies that are furthest removed from the ‘normal practice’ of the discipline concerned. This may happen when a scientific field scarcely yet deserves the name of ‘discipline’, because its practice is not yet strongly insulated and institutionalized. (Rudwick 1979:67)

This statement was made in conjunction with Rudwick’s account of the early work of the 19th-century geologist Charles Lyell (1799-1875), who himself had ‘transposed’ ideas taken from language decipherment (in fact, picking up on a reference by Cuvier to Champollion’s work of 1822) and from demography into his theory of the earth. As I hope to show in this paper, Rudwick’s observation sheds interesting light on

what appears to have happened at the beginning of the 19th century when linguistic scholars began to work toward the establishment of a field distinct from other, traditional, fields concerned with language such as classical philology. A similar motive for the search for ‘creative analogies’ outside linguistics was given many years earlier in a seminal paper by Ernst Cassirer (1874-1945), where he noted that the field had to proceed somewhat tentatively in the development of its research methods at the outset of the 19th century, and that, as a result,

It was natural that, in these first attempts, linguists looked for the help and guidance of other branches of knowledge that, long before, had established their methods and principles. History, physics, psychology could be used for this purpose. (Cassirer 1945:99-100)

Cassirer might not have been correct in his identification of the major fields that served the first generations of 19th-century linguists as pilot disciplines, but he surely was right in his general observation for the motivation on the part of these scholars to look outside their own domain for ‘models and analogies’ as proponents of other disciplines have done before them (cf. Hesse 1963).

1.0 The Impact of the Natural Sciences on 19th-Century Linguistics

No discipline is established overnight. There are probably long periods of searching and building which precede the creation of an independent field of study. At first, its claim to autonomy may be challenged, and when it is finally granted by other, close as well as distant, disciplines, it may give up its autonomous character by its own free will and move into field-transgressing, inter-disciplinary research. The history of linguistics has shown such a development during the past 150 and more years.

Where the earlier phases in the history of linguistics is concerned, Keith Percival has recently shown that such terms as ‘root’ (*radix*), ‘trunk’ (*stirps*), and ‘structure’ (*structura*) can be found in the traditional grammatical literature as far back as Marcus Terentius Varro’s *De Lingua Latina* of two millennia ago (Percival 1987). Perhaps the fact that Varro was a ‘gentleman farmer’ might have suggested the choice of metaphor to him.** Similarly, the family tree idea, usually — and rightly — associated with the name of August Schleicher (e.g., 1853), has a much longer history and could be traced back to biblical genealogical usage. However, I maintain, these metaphors did not acquire a value comparable to what they became during the 19th century when linguistics was developing toward an autonomous field of scholarly endeavour. During the past century the terms and concepts encountered in linguistic discourse frequently derived from the natural sciences, several of which had established themselves almost at about the same time though obviously somewhat more quickly — I am thinking of botany, chemistry, comparative anatomy, and biology as well as geology. These notions have taken on specific meanings on the way as

linguistics as a separate field established itself. It may have been that the early borrowings from the natural sciences were little more than an attention-grabbing device, but it can be shown that they soon developed into descriptive, investigative, and possibly explanatory tools. On the other hand, we should not forget the important role that metaphor plays in the construction of theoretical models in science (cf. Kuhn 1979:415), and probably even more so in modern science as it frequently has to deal with entities that are no longer visible to the naked eye and directly observable.

In the centre of these concepts that took on a methodological, epistemological, and theoretical significance stood no doubt the idea of language as an ‘organism’, a term still found in 20th-century linguistic literature though largely drained of its biological connotations (cf. Saussure’s use of ‘organisme grammatical’ in his lectures alongside with ‘système’). If language was indeed something like a ‘living organism’, it would explain, as we find in the writings of the first two generations of comparative-historical linguists from Friedrich Schlegel to August Schleicher and partly even beyond (cf. the title of W. D. Whitney’s influential book of 1875, *The Life and Growth of Language*), why languages change, and that they must have a beginning, a development and, eventually, an end. Characteristically, we find in Franz Bopp, the acknowledged founder of comparative linguistics, the following assertion made on the occasion of his review of Grimm’s *Deutsche Grammatik*:

Die Sprachen sind [...] als organische Naturkörper anzusehen, die nach bestimmten Gesetzen sich bilden, ein inneres Lebensprincip in sich tragend sich entwickeln und nach und nach absterben, indem sie, sich selber nicht mehr begreifend, die ursprünglich bedeutsamen, aber nach und nach zu einer mehr äußerlichen Masse gewordenen Glieder oder Formen ablegen oder verstümmeln und mißbrauchen, d.h. zu Zwecken verwenden, wozu sie ihrem Ursprunge nach nicht geeignet waren. Eine Grammatik in höherem, wissenschaftlichem Sinne soll eine Geschichte oder Naturbeschreibung der Sprache sein; sie soll [...] besonders aber naturhistorisch die Gesetze verfolgen, nach welchen ihre Entwicklung [...] vor sich gegangen.

(Bopp 1836[1827]:1)

Although this is a frequently cited passage, it is by no means the only one in which Bopp expresses himself in favour on a natural-science model for his understanding of the nature of language and the manner in which it should be analyzed. As a matter of fact, such an organicist concept of language would entail that each language is a structured whole in which all parts are inter-connected, and where changes in one part of the system are likely to produce alterations in other parts of the ‘organism’. Indeed, if we agree with Rensch (1967) that there has been a historical sequence from ‘organism’ to ‘structure’ via ‘system’, we can see that we have maintained similar theoretical positions (on the interrelatedness of linguistic parts) without subscribing to a biological view of language — although we may notice a return to such notions in certain quarters (e.g., Sampson 1980), possibly as a result of statements by Noam Chomsky such as ‘the idea of regarding the growth of language as analogous to the development of bodily organism is [...] quite natural and plausible (1975:11)’.¹

Still today, biological and even medical terminology is being used by linguists, for instance in conjunction of recent discussions of ‘language death’ and pidginization. Thus a ‘natural’ phonologist and morphologist like Wolfgang Dressler speaks not only of ‘language decay’ and ‘dying languages’ (as if languages were living beings in the first place), but also of ‘dysfunctional’, ‘pathological’, and ‘maladaptive’ states of speech (Dressler 1988), as if languages, and not their speakers’ command of them, could indeed be properly characterized that way.

2.0 Instances of Natural-Science Influence on Linguistic Thinking

As indicated earlier, there were a number of fields of scientific endeavour already established around at the turn of the 19th century when linguists were groping to develop the study of language as a discipline apart from the various traditional subjects under which it had played a subordinate role. Among those traditional fields were rhetoric, philosophy, (Latin) grammar teaching, and what is generally subsumed under philology. The scientific fields that were or were soon to be regarded as important subjects of research — and this not only by the scientific community but by the educated public at large, one should add — included botany, chemistry, biology, comparative anatomy, in particular in the form of paleontology and osteology, and geology. The mention of these disciplines in conjunction with the study of language may sound strange at first, but everyone who has read a 19th-century linguistics text, containing at least some general remarks about the nature of language and of linguistics, will have come across references to at least a few of those disciplines in the course of his readings. August Schleicher’s work appears to be particularly revealing and has, as a result, been frequently referred to in the literature, though at times without any understanding of what Schleicher was trying to do and why. But there are many hints and indeed explicit references to the natural sciences to be found in early 19th-century linguistics texts, and even well before 1800 (cf. Schmidt [1986: 43-61], especially with regard to the organism concept and related ideas).

Schleicher, who is usually cited — and criticized — for his biological view of language (see Romportl 1989), was by no means the first to espouse a philosophy of science which ranks linguistics among the empirical-deductive sciences. Thus we will find references to the natural sciences in the works of those who are regarded as the founders of comparative-historical linguistics, and indeed already in the linguistic literature of the 18th century (though not with the same consequences for the science of language). I will cite just one example of the early 19th century as it refers to several fields that appear to have been regarded as pilot disciplines, i.e., as fields who served as models to other fields in matters of methodology, if not epistemology. It comes from a review of the first volume of Jacob Grimm’s *Deutsche Grammatik*, which in its second edition was almost exclusively devoted to phonology. It reads:

Eine solche Darstellung läßt sich nicht geben ohne die sorgfältigste und genaueste

Untersuchung der ersten und einfachsten Bestandteile. Dieser Theil der Naturgeschichte — denn so haben wir nun die Grammatik ansehen gelernt — hat seine Anatomie, seine Physiologie, seine chemische Analyse, so gut wie die übrigen.
(Benecke 1822:2002-2003)

In other words, the reviewer not only takes it for granted that the study of grammar belongs to what he calls 'natural history', but also that language structure is characterized by having an anatomy, a physiology, and a chemical analysis, thus referring to three disciplines that appear to have been regarded as models for others at the time. The central sections of this paper will pursue some of these lines that appear to have been an inspiration to these early 19th-century linguistic scholars, beginning with botany, which had established a framework of scientific research during the second half of the 18th century, and ending with geology, which appears to have attracted their attention only from the 1860s onwards.

As for Grimm, it is interesting to note that as late as 1851, at age 64, he maintained, on the occasion of a lecture given at the Berlin Academy:

Man hat das sprachstudium vielfach und auch nicht ohne grund dem der naturgeschichte an die seite gestellt; sie gleichen einander sogar in der art und weise ihres mangelhaften oder besseren betriebs. denn ins auge springt, dasz gerade wie jene philologen der classischen sprachdenkmäler um ihnen critische regeln für die emendation beschädigter oder verderbter texte abzugewinnen erforschten, so auch die botaniker ihre wissenschaft ursprünglich darauf anlegten in einzelnen kräutern heilsame kräfte zu entdecken, die anatomen in die leiber schnitten, um des innern baus sicher zu werden.
(Grimm 1984[1851]:66)

And Grimm continued by arguing that 'die sprachwissenschaft, wie mich dünkt, hat auf demselben weg, dessen betreten die pflanzen und thierzergliederung ihren engeren standpunct entrückte, und zu einer vergleichenden botanik und anatomie erhob, endlich eben so durchgreifende umwälzung erfahren' (ibid.). In other words, linguistics followed the same path as botany and comparative anatomy in its development of scientific principles of analysis, leading to a revolution in the discipline.

2.1 Botany and Linguistics

It is curious for us today to read the following passage in a review of the second edition of Jacob Grimm's *Deutsche Grammatik* of 1822 by Georg Friedrich Benecke (1762-1844), professor of German philology and librarian at the University of Göttingen, in which the reviewer challenges his contemporaries to follow Grimm's example,

um die Sprachwissenschaft sich dieselben Verdienste zu erwerben, welche die Nachfolger des unsterblichen Linné sich durch ihre mehr oder minder begränzte Untersuchungen um die Naturwissenschaft erworben haben. (Benecke 1822:2007-2008)

The explicit reference to Linnæus is of interest to the historian of linguistics as it suggests that many years after the publication of Carl von Linné's (1707-1778) *Systema Naturæ* (Leiden, 1735), *Philosophia Botanica* (Amsterdam, 1736), and *Genera Plantarum* (Leiden, 1737), which laid the foundations of plant classification according to specific traits, his work remained in the mind of the educated public. Indeed, throughout much of the 19th century Linnæus' works were generally regarded as paradigmatic, i.e., as exemplars of how scientific work is to be conducted, so much so that it could serve as a model for other, possibly quite unrelated, fields. It may also be noted that until the late 19th century much botanical work was done by members of the European 'leisure classes'.

As a result, it should perhaps not surprise us that a major portion of 19th-century linguistic activity was concerned with language classification. Although 18th-century work, notably by the French grammarian at the Royal Court, Abbé Gabriel Girard (1677-1748), and the British economist Adam Smith (1723-1790), has been cited in the literature as foreshadowing 19th-century linguistic typology, there is little doubt that it was with the infiltration of natural science thinking into linguistics at the turn of the past century that we can detect a particular interest in language classification, in the work of Friedrich and August Wilhelm Schlegel, Humboldt, and their followers, even if they did not argue that linguistics should be a natural science. But language classification according to morphological type or genetic relationship, which in Friedrich Schlegel's influential work of 1808 was still tied together, was only one and not the most important preoccupation of 19th-century scholars in the science of language, and few direct references to Linnæus can be found in their writings (cf. Picardi 1977). Other fields drew more attention, notably biology and, to a lesser extent, chemistry.

It should be recalled that Linnæus' taxonomic approach represents a static model of the 'natural system' (*systema naturæ*) of organisms. As a result, those who adopted his approach tended to follow a non-historical, essentially descriptive, line of research, placing the grammar of one language side by side with the grammars of other languages. This was typical of the work of Rasmus Kristian Rask (1787-1832), who in 1819 proposed to transpose Linnæus' division into *classis*, *ordo*, *genus*, *species*, and *varietas* into linguistic distinctions between *Race* (*Aet*), *Klasse*, *Stamme*, *Gren*, *Sprog*, and *Sprogart*, in order to bring order into the data amassed by Johann Christoph Adelung (1732-1806) and Johann Severin Vater (1771-1826) in the *Mithridates* at the beginning of the 19th century (cf. Diderichsen 1976:140). Likewise, in the work of Franz Bopp (1791-1867) the emphasis lay on morphology and a fairly ahistorical approach to language. Bopp, in his *Vergleichende Grammatik* published from 1833 onwards, was placing the grammar of one language, e.g., Sanskrit, alongside with the grammars of the other Indo-European languages; no attempt was made to present any of them in terms of historical succession.

Still in the 1850s and 1860s, August Schleicher, thirty years younger than Bopp, referred frequently to the work of the botanist Matthias Jacob Schleiden (1804-1881), his colleague at the University of Jena, and his *Grundzüge der wissen-*

schaftlichen Botanik (1842-43) as a source for his understanding of what scientific work was all about, in particular where the importance of observation and inductive reasoning was concerned (cf. Schleicher 1863:6). There can be no surprise that in his classification of languages on the basis of their morphological organization (e.g., Schleicher 1850) — we may recall that it was Schleicher who introduced the term ‘morphology’ into linguistic nomenclature in 1859 — there was no place for the high-minded Humboldtian speculations about language structure and world view (*Weltansicht*); as a matter of fact, syntax was explicitly excluded from the domain of linguistics proper as it involved the human will.

2.2 Linguistics and Chemistry

It can be doubted that the early 19th-century linguistic scholars were familiar with the essentials of Antoine Laurent Lavoisier’s (1743-1794) *Traité élémentaire de chimie* (Paris, 1789), which is frequently regarded as marking the beginning of the ‘new chemistry’. But it remains interesting to note that the term ‘analysis’ for instance shows up in writings about language from the end of the 18th century onwards. For instance in the *Allgemeine Sprachkunde* (1796) by the Alsatian language pedagogue and mathematician Ignatz Mertian (1766-1843), who, among other things, participated in 1792 in a public lecture series given in Paris by the director of the Institut des Sourds et Muets in Paris, Abbé Sicard,² we read that there are two kinds of progress that can be made in the sciences, one by accretion accompanied by the correction of errors on the way which however do not affect the framework, the other by the discovery of fundamental flaws which lead to a complete replacement of the entire edifice by a new one. About the second alternative, Mertian writes (1796:3-4):

Oder es werden Unrichtigkeiten und falsche Unterschiebungen (Suppositionen) in den Urbegriffen selbst der Wissenschaften entdeckt, auf Welchen ihr ganzes Lehrgebäude gegründet war, Das deßwegen einigermaßen niedrigerissen werden muß, um auf wahren und richtigen Begriffen wieder neu aufgeführt zu werden; wie es neulich in Frankreich mit der Scheidekunst (Chemie) geschehen ist. (Emphasis added: KK)

I believe that Mertian was having Lavoisier in mind, whose *Traité élémentaire* was translated into German as early as 1793. In Mertian’s opinion, the science of language (‘die Wissenschaft der Sprache’) still belongs to the first category; i.e., it is still clinging to the traditional *Lehrgebäude* with modifications introduced by individual grammarians. In his efforts to lead linguistics to a restructuring of its base Mertian refers (6-7) to mathematics as a field to emulate in which new discoveries produce a revision of fundamental assumptions. But if his frequent references to ‘Analyse der Sprache’ (e.g., p.135), ‘Analyse des grammatischen Satzes’ (p.233), or ‘Zergliederung’ of language into its individual constituents (p.137) are any indication, the discoveries of the new chemistry were not entirely lost on him, especially

when he entitles — perhaps under the influence of Condillac — the first main part of his general linguistic work ‘Die Sprache, als eine analytische Methode betrachtet, Welche zur Entdeckung der Kenntnisse führt’ (p.44).

That recent findings in chemistry did not fail to inspire the imagination of the best minds may be gathered from an observation made in August Wilhelm and Friedrich Schlegel’s *Athenäum*, published in the second issue of the first volume of 1798, two years after Mertian’s book. There Friedrich Schlegel noted in the 404th *Fragment*:

Es gibt keinen Philologen [...] ohne grammatisches Interesse. Philologie ist ein logischer Effekt, das Seitenstück der Philosophie, Enthusiasmus für chemische Erkenntnis; denn die Grammatik ist doch nur der philosophische Teil einer universellen Scheidungs- und Verbindungskunst.***

However, these references seem to have led to little else than the frequent use of the concept and term of ‘analysis’ or, in the writings of Bopp and Grimm for instance, of ‘Zergliederung’ (Bopp 1824, and in subsequent publications) or ‘Zerlegung’ (Grimm 1822:274; 1826:396). Indeed, it could be argued that these usages might well have been adopted from comparative anatomy, which, as I will show in the next section, exercised a much more profound influence on the founders of the ‘new philology’.

2.3 *Linguistics and Comparative Anatomy*

It appears that the work of comparative anatomists like Johann Friedrich Blumenbach (1752-1840) in Göttingen (e.g., Blumenbach 1805) and, especially, Georges Cuvier (1769-1832) in Paris received particular attention among early 19th-century language scholars. Post-revolutionary France in general not only produced considerable advances in science but attracted the best minds of Europe, particularly Germany, in part also because France at the turn of the century did not exercise the mind control that characterized most of the other states at the time. Friedrich Schlegel, and later on his elder brother August Wilhelm too, spent several years in Paris; so did Wilhelm von Humboldt and subsequently also his brother Alexander, not to mention the years that Franz Bopp spent there in Friedrich Schlegel’s footsteps (1812-1816). Jacob Grimm’s path too led him to Paris, albeit more briefly, following the defeat of Napoleon, in conjunction with an effort to retrieve cultural material that his armies had taken from historical sites and museums in Germany.

The *locus classicus* of an explicit reference to Comparative Anatomy in the history of linguistics is without doubt the following statement in Friedrich Schlegel’s (1772-1829) influential *Ueber die Sprache und Weisheit der Indier* of 1808:

Jener entscheidende Punct aber, der hier alles aufhellen wird, ist die innre Structur der Sprachen oder die vergleichende Grammatik, welche uns ganz neue Aufschlüsse über die Genealogie der Sprachen auf ähnliche Weise geben wird, wie die verglei-

chende Anatomie über die höhere Naturgeschichte Licht verbreitet hat.
(Schlegel 1808:28; italics mine: KK; English transl. in Timpanaro 1977:XVIII)

That this in fact programmatic statement was not simply a metaphor that presented itself quite independently of the natural sciences, as Nüsse (1962:41) would have it, but was indeed the result of Schlegel's acquaintance with Cuvier and whatever the educated classes in Paris knew about his work and the findings of other scientists of the day, has been demonstrated elsewhere (Koerner 1989 [1987]:275-277), and therefore need not be repeated here.*** That Schlegel's reference to comparative anatomy was not lost on his contemporaries may be gathered from the echo it found in Jacob Grimm's preface to the first volume of his *Deutsche Grammatik*, where he says:

Wird man sparsamer und fester die Verhältnisse der einzelnen Sprachen ergründen und stufenweise zu allgemeinem Vergleichen fortschreiten; so ist zu erwarten, daß bei der großen Menge unsern Forschungen offener Materialien einmal Entdeckungen zu Stande gebracht werden können, neben denen an Sicherheit, Neuheit und Reiz etwa nur die der vergleichenden Anatomie in der Naturgeschichte stehen.
(Grimm 1819:XII).

What is important in the present discussion, however, is that Schlegel draws important conclusions for the study of language from the 'creative analogy' that he perceives between Comparative Anatomy and Comparative Linguistics, namely, that earlier stages of linguistic forms, and of languages, can be reconstructed. Thus Schlegel notes in the first chapter of his book, when speaking about 'Veränderungs- oder Versetzungsregeln der Buchstaben', and after having rejected the traditional 'etymologische Künstelein':

... wenn sich die Mittelglieder [of historically attested forms] historisch nachweisen lassen, so mag *giorno* von *dies* abgeleitet werden, und wenn statt des lateinischen *f* im Spanischen so oft *h* eintritt [und] das lateinische *p* in der deutschen Form desselben Worts sehr häufig *f*, und *c* nicht selten *h*, so gründet dieß allerdings eine Analogie auch für andre nicht ganz so evidente Fälle.
(Schlegel 1808:6-7)

Schlegel concludes his discussion of the yet to be established comparative-historical linguistics in the following manner (p.84):

Genug, wenn hier nur in das Ganze Ordnung gebracht und befriedigend angezeigt ist, nach welchen Grundsätzen etwa eine vergleichende Grammatik und ein durchaus historischer Stammbaum, eine wahre Entstehungsgeschichte der Sprache, statt der ehemaligen erdichteten Theorien vom Ursprunge derselben, zu entwerfen wäre.
(English transl. in Timpanaro 1977:XXXVII)

Unlike Schlegel, who was concerned with whole of the Indo-European language family, Grimm devoted his attention almost exclusively to the Germanic branch. As a

result, he felt much less than Schlegel the desire to engage in reconstruction of earlier language stages. Instead, Grimm emphasized even more the historical nature of his research, in fact to the extent of asserting that ‘jedes Wort hat seine Geschichte und lebt sein eigenes Leben’ (Grimm 1819:xiv). But before discussing the possibility of an influence of comparative anatomy on linguistic thinking in the early 19th century, it appears desirable to insert a few comments on Georges Cuvier and his work, notably his voluminous *Leçons d’anatomie comparée* (Paris, 1800-1805), the *Recherches sur les ossements fossiles des quadrupèdes* (1812), and *Le Règne animal distribué d’après son organisation* (Paris, 1817). What is characteristic of Cuvier’s teachings, whether dealing with comparative anatomy, frequently in the form of osteology, or with geological issues, is that he maintained a position which was dubbed ‘catastrophism’ by the English philosopher of science William Whewell (1794-1866) several years after Cuvier’s death. This means that Cuvier essentially denied the evolution of species à la Lamarck for instance (see 2.4 below), arguing instead that fossil finds do not represent ancestors of presently existing species but species that were wiped out by catastrophic events on the earth. (Species encountered today were, in Cuvier’s opinion — which remained the majority view during most of his lifetime — the result of spontaneous new creations.)

What linguists appear to have found most attractive in Cuvier’s work was however not his non-historical, anti-evolutionary stand — this was evidently ignored by Friedrich Schlegel in his 1808 book already, as we may gather from the earlier quotation — but his well-known ‘principe de corrélation’ which he had first espoused in his ‘Lettre à [Jean-Claude] Mertrud’ prefaced in 1805 to the new edition of his *Leçons d’anatomie comparée*, and which found its full formulation and exploitation in his 1812 osteological work. It is from there that I take the following quotation:

Tout être organisé forme un ensemble, un système unique et clos, dont toutes les parties se correspondent mutuellement, et concourent à la même action définitive par une réaction réciproque. Aucune de ces parties ne peut changer sans que les autres changent aussi; et par conséquent chacune d’elles, pris séparément, indique et donne toutes les autres. (Cuvier 1812:58)

In order to obtain an idea of the possible effect of a transfer of concepts, we may replace ‘être organisé’ by ‘langue’, keeping in mind that the organicist view of language reigned supreme during much of the 19th century. However, I do not think that 19th-century scholars were particularly interested in a ‘structuralist’ view of language that Cassirer (1945) saw emanating from this Cuvierian passage. Rather, confronted with the fact that earlier stages of languages or remains of languages spoken thousand and more years ago were transmitted only imperfectly and in incomplete form, these early linguists could have been led to the idea of reconstruction as in fact Schlegel had suggested in 1808 and as Schleicher was implementing two generations later. In other words, the — basically static — principle of correlation, which Leonardo da Vinci had illustrated so well in his *canone di pro-*

porzioni three hundred years earlier, appears to have been much less in the mind of these scholars than the idea of reconstruction of the grammar of a language on the basis of fragments of transmitted texts.

2.4 *Linguistics and Biology*

The natural scientist who could have led Friedrich Schlegel to an evolutionist view of language was possibly the biologist Jean Baptiste de Lamarck (1744-1829), whose *Système des animaux sans vertèbre, en table générale des classes, des ordres et des genres de ces animaux* appeared in Paris in 1801, before his arrival in the French capital. In 1802 Lamarck published his 2-volume *Recherches sur l'organisation des corps vivants* which makes evolutionism explicit even though the systematic aspect remains predominant. (Lamarck's *Philosophie zoologique*, which contained, perhaps for the first time, graphic representations of something like a genealogical tree in the natural sciences, was published only in 1809, i.e., one year after Schlegel's *Ueber die Sprache und Weisheit der Indier*, and so it must remain an open question where Schlegel got his 'Stammbaum' idea from.) Schlegel never referred to Lamarck, perhaps because the French biologist was shunned by establishment science during his lifetime. (Another explanation would be that Schlegel got his dynamic organicist view of language through the ideas that were developing in Germany during the late 18th century and which were opposed to the mechanist view of things, alive or not, in Enlightenment France, as Romaško 1991 has recently suggested.)

We do not know whether August Schleicher, the most influential mid-19th-century historical linguist, was familiar with Lamarck's work, but there is no doubt that Schleicher received much of his inspiration in matters of methodology and philosophy of science from the natural sciences, in particular contemporary botany, as he stated frequently in his writings after 1849. In other words, many years before the appearance of Charles Darwin's (1809-1881) *Origin of Species* (1859) which is frequently, albeit erroneously, cited as having led him to a naturalistic view of language, Schleicher held the view that linguistics — in contrast to philology — must be a *Naturwissenschaft*. Indeed, references to the natural sciences abound in Schleicher's writings, especially during the earlier years (cf. Koerner 1981, for details), although his so-called 'Darwinistic' papers of 1863 and 1865 are usually referred to in the literature as evidence for the — in fact misleading — claim according to which Schleicher had turned from Hegelian philosophy to evolutionary biology as a result of Darwin's book (which he first read in its second German translation of 1862). Indeed, Schleicher could well have been led to a naturalist view of language through his study of Hegel (cf. Koerner 1975:748-752, for details).

It appears that it was under the influence of (pre-Darwinian) evolutionary biology that Schleicher conceived of language as developing in stages from mineral to vegetable and, finally, to animal states which he found paralleled by monosyllabic, agglutinative, and inflectional stages of language evolution which the Schlegels and

Humboldt had talked about earlier. This triadic development of language and the adoption of the family tree model, for which he is famous in the annals of the discipline, are not the only 'transposed concepts' in Schleicher's work. Schleicher's philosophy of science, his technical vocabulary, and his analytical procedures are imbued with the scientific climate of his time. It should be pointed out that his first genealogical trees were published in 1853, six years before the appearance of Darwin's work, which contains a diagram only faintly resembling what is depicted in realistic contours in a note by Schleicher on the early splits of the original Indo-European people and which was published in a popular monthly for the educated classes (see reproduction in Koerner 1989:190).

Where Schleicher's evolutionist views are concerned, they are not only clearly stated many years before he took note of Darwin's work, which he regarded as confirming his long-held views, but also Schleicher in effect remained a pre-Darwinian evolutionist throughout his life. Thus, unlike Darwin, he regarded the development of language — and we should recall that for Schleicher only phonology and morphology were proper linguistic domains — as a downward development, a *Verfall*, of the original complex structures. We may compare Ancient Greek with its complex affixal morphology with Modern English to see what Schleicher had in mind, namely, the loss of most morphological markers, of the case system, of verb endings, etc. By contrast, in Darwin's theory the development was upward, from simple to more and more complex organisms.

2.5 *Linguistics and Geology*

The scholar who has been credited with the introduction of notions derived from the geological sciences into linguistic theory and practice is the American Sanskrit scholar and general linguist William Dwight Whitney (1827-1894). Before investigating the extent to which this transfer may have enriched the understanding of language and its development, it appears desirable to state, at least briefly, what geology of the time had to offer, coming, as it did, to the attention of linguistic scholars much later than many other natural-science disciplines.

Although Charles Lyell (1797-1875) was not the first to espouse what his reviewer Whewell termed the concept of 'uniformitarianism', it is through his three-volume *Principles of Geology* of 1830-1833, which ran through twelve editions by the time of Lyell's death, that the principle which was to exert its impact on subsequent research in the geological sciences became best known (for the pre-history, see Christy 1983:3-4). As a matter of fact, Lyell himself had announced the guiding principle underlying his argument in the first edition of his work by adding in its subtitle 'being an attempt to explain the former changes to the earth's surface by reference to causes now in operation'.³

If we were to transfer this principle to the history of a given language, it would mean that the linguist should be able to arrive at an explanation of past changes

through the investigation of present-day speech activity, something which indeed bears fruit. For instance, when observing spoken language, we notice phenomena such as assimilation, metathesis, contraction, and other characteristics noted by phoneticians and other analysts. Even if not all such 'faits de parole' become 'faits de langue', to use the Saussurean distinction, there is no reason to doubt that as long as there have been speakers of a given language those phenomena have been produced quite regularly. Indeed, any documented language history would supply ample evidence for this. Even if we move from physiological phenomena of speech to psychological ones, we could apply the uniformitarian principle to linguistics quite successfully, especially when we refer to the workings of analogy. As a matter of fact, this is frequently done by historical linguists still today, though it is doubtful whether they are generally aware of the fact that the reasoning behind this procedure originally derived from scientific work otherwise entirely unrelated to the study of language. (For notable exceptions, see Labov 1974, 1982:20; Christmann 1978:553-555; Lass 1980: 53-57.)

In what follows, I shall devote the remainder of this section to the relevant passages in Whitney's work, especially those found in his first book on general linguistics, *Language and the Study of Language* (henceforth: LSL).⁴ Before doing so, however, a few words on Whitney's intellectual background are in order.

We know from Whitney's own account of 1885 and from those of his American colleagues (e.g., Seymour 1894, Ward 1897) that before embarking on the study of Sanskrit and comparative philology in earnest — by traveling to Europe to study under Albrecht Weber (1825-1901), Franz Bopp (1791-1867), and others in Berlin, and Rudolf Roth (1825-1895) in Tübingen for several years (1850-1853), Whitney had taken a much more important interest in the natural sciences, in particular ornithology and botany, in addition to geology which had become his elder brother's profession. Josiah Dwight Whitney (1819-1896), by eight years William's senior, had attended a lecture given in Boston by Sir Charles Lyell himself which determined his scientific career (Nash 1973:315). While serving as chief of the California State Geological Survey in 1864, Josiah discovered the highest mountain in (what then was) the United States, which since bears his name. There is no reason to doubt that his younger brother was well acquainted with Lyell's work too, especially given the fact that he worked as his brother's assistant on a United States Geological Survey of the Lake Superior region in the mid-1840s after graduation from Williams College, New Haven, much before he had taken a serious interest in comparative philology.⁵

In his 1867 book, Whitney makes a number of references to the geological sciences and a direct reference to chapter 23 of Lyell's later book, *Geological Evidences of the Antiquity of Man* (1863), which is devoted to a discussion of 'Origin and Development of Languages and Species Compared' (LSL 47n), calling it a 'lucid and able analogical argument bearing on the Darwinian theory of the mutation of species.' This quotation is instructive as it makes clear that the relation between geology and linguistic science in matters of method could be one of analogy only.

It is interesting to note that Whitney (unlike Schleicher before him), who was so

well familiar with the natural sciences of his day, did not allow himself to be blindfolded by them; on the contrary, he did not tire of pointing out that linguistics was an 'intellectual and moral', not a 'physical science' (e.g., LSL 49). Already on page 1 of his book, where he addresses the issue of the study of language as a science, Whitney compares the field with geology, chemistry, astronomy and physics as 'the other sciences of observation and induction'. Like these, Whitney notes on the following page, linguistics has gone through 'the preliminary stages' of '[h]asty generalizations, baseless hypotheses, inconclusive deductions', which only in the 19th century, owing to the 'restless and penetrating spirit of investigation, [...], with its insatiable appetite for facts, its tendency to induction, and its practical recognition of the unity of human interests' led to 'a real comprehension of the life and growth of language' (LSL 3). In short: 'Comparative philology, [...], became the [...] forerunner and founder of the science of human speech.' (Ibid.). The relationship between the methodology of linguistic science and geology is that of 'a noteworthy and often-remarked similarity', not of identity:

The science of language is, as it were, the geology of the most modern period, the Age of Man, having for its task to construct the history of development of the earth and its inhabitants from the time when the proper geological record remains silent; when man, no longer animal, begins by the aid of language to bear witness respecting his own progress and that of the world around him. (LSL 47)

And Whitney continues by illustrating the parallelism between geological and linguistic investigation in the following terms:

The remains of ancient speech are like strata deposited in bygone ages, telling of the forms of life then existing, and of the circumstances which determined or affected them; while words are as rolled pebbles, relics of yet more ancient formations, or as fossils, whose grade indicates the progress of organic life, and whose resemblances and relations show the correspondence or sequence of the different strata; while, everywhere, extensive denudation has marred the completeness of the record, and rendered impossible a detailed exhibition of the whole course of development. (Ibid.)

While admitting further possible analogies, Whitney again points out that these are merely analogies and should not lead us 'to determine our fundamental views respecting the nature of language and the method of its study', or to 'call language a living and growing organism, or pronounce linguistics a physical science, because zoology and geology are such' (LSL 47-48). Indeed, Whitney regards it as a point of 'essential consequence in linguistic philosophy' that linguistics is, by contrast, a 'historical or moral science' (p.48), not a physical but an 'intellectual and moral' discipline (p.49), and its object, language, as an institution formed, developed, and altered by 'the will and consent of men' (p.48). And in order to make his position perfectly clear — no doubt because of his awareness of the view held on this matter by Schleicher, Max Müller (1823-1900), and others — Whitney writes the following:

What makes a physical science is that it deals with material substances, acted on by material forces. In the formation of geological strata, the ultimate cognizable agencies are the laws of matter; the substance affected is tangible matter; the product is inert, insensible matter. In zoology, again, as in anatomy and physiology, the investigator has to do with material structure, whose formation is dependent on laws implanted in matter itself, and beyond the reach of voluntary action. In language, on the other hand, the ultimate agencies are intelligent beings, the material is — not articulated sound alone [as Schleicher for one was inclined to argue: KK], which might, in a certain sense, be regarded as a physical product, but — sound made significant of thought; and the product is of the same kind, a system of sounds with intelligible content, expressive of the slowly accumulated wealth of the human race of creation. What but an analogical resemblance can there possibly be between the studies of things so essentially dissimilar? (LSL 49)

Several years earlier Max Müller had affirmed in his *Lectures on the Science of Language*:

I always took it for granted that the science of language [...] is one of the physical sciences, and that therefore its method ought to be the same as that which has been followed with so much success in botany, geology, anatomy, and other branches of the study of nature. (Müller 1861:31)

I am dealing with Whitney's views in such detail because his transposition of natural-science ideas into linguistics is much less known in the history of the field and also because his insistence on the fact that despite this infusion linguistics remained a 'historical' or 'moral' science played an important role in the final rejection of the Schleicherian view of language and of linguistics during the last quarter of the 19th century.⁶ In 1881, the French jurist and linguist Lucien Adam (1833-1918) sought a compromise position between Schleicher, Müller, Abel Hovelacque (1843-1896), on the one hand, and Whitney, on the other, by stating that linguistics was a 'historical' science by its object and a 'natural' science by its method of research (Adam 1881).

The main goal of 19th-century geology was to analyze and explain earlier stages and events on the earth's surface. Similarly, comparative philologists of the time were no longer satisfied with the description of the grammars of attested languages, especially those of the classical Indic, Greek, and Latin periods. They had a variety of daughter languages in front of them and were wondering how these had developed. The organicist view of language, so prevalent during much of the 19th century (cf. Schmidt 1986), appeared to offer an explanation as Whitney himself concedes, at least metaphorically speaking:

A language, like an organic body, is no mere aggregate of similar particles; it is a complex of related and mutually helpful parts. As such a body increases by the accretion of matter having a structure homogeneous with its own, as its already existing organs form the new addition, and form it for a determinate purpose — [...] — so is it also with language; its new stores are formed from, or assimilated to, its previous substance; it enriches itself with the evolution of its being, the

expression of the thought of those to whom it belongs. Its rise, development, decline, and extinction are like birth, increase, decay, and death of a living creature.
(LSL 46)

And following Schleicher's (1863) adaptation of Darwinian biology to linguistic inquiry and Lyell's observations of the same year, Whitney adds:

There is yet a closer parallelism between the life of language and that of the animal kingdom in general. The speech of each person is, as it were, an individual of a species, with its general inherited conformity to the specific type, but also with its individual peculiarities, its tendency to variation and the formation of a new species. The dialects, languages, groups, families, stocks, set up by the linguistic student, correspond with the varieties, species, genera, and so on, of the zoologist. And the questions which the students of nature are so excitedly discussing at the present day [i.e., in 1867: KK] — the nature of specific distinctions, the derivation of species by individual variation and natural selection, the unity of origin of animal life — all are closely akin with those which the linguistic student has constant occasion to treat.
(LSL 46-47)

Again Whitney regards this parallel between the natural sciences and linguistics as allowing for nothing but 'interesting and instructive analogies', not more. That these analogies can be fruitful is subsequently illustrated in Whitney's book on several occasions, especially when he draws parallels between geological procedure and reasoning and linguistic investigation. For instance, the work of an etymologist, in the absence or dearth of material illustrating distinct periods in the history of a given language, can be seen as one

of interrogating the material of language itself, of making words yield up, on examination, their own history. He applies the analogy of the process of change and development which are actually going on in language to explain the earlier results of the same or like processes. And, if he work with due caution and logical strictness, his results are no more exposed to question than are those of the geologist, who infers, from the remains of animal and vegetable organisms in deeply-buried rocks, the deposition of those rocks in a period when animal and vegetable life, analogous with that of our own day, was abundant.
(LSL 61-62)

This clear expression in favour of the uniformitarian principle is repeated on various other occasions in Whitney's influential book;⁷ for instance when he comes to talk about the origin and nature of dialects in the history of language, he argues that he could deduce from these their common ancestry based on the following reasoning:

The nature and uses of speech, and the forces which act upon it and produces its changes, cannot but have been essentially the same during all the periods of its history, amid all its changing circumstances, in all its varying phases; and there is no way in which its unknown past can be investigated, except by the careful study of its living present and its recorded past, and the extension and application to remote conditions of laws and principles deduced by that study. Like effects, as we

have already had occasion to claim, imply like causes, not less in the domain of language than in that of physical science; ... (LSL 184)

And as if to make it abundantly clear what he meant by this comparison, Whitney continued:

and he who pronounces the origin and character of ancient dialects and forms of speech to be fundamentally different from those of modern dialects and forms of speech can only be compared with the geologist who should acknowledge the formation by aqueous action of recent gravel and pebble-beds, but should deny that water had anything to do with the production of ancient sandstones and conglomerates. (Ibid.)

That Whitney was very much familiar with the geology of his day is evident from this quotation and a number of others found in his book,⁸ for instance when he refers to the opposing theory in the field maintained by Cuvier and others at the time that Lyell's *Principles* first appeared:

The more thorough we are in our study of the living and recent forms of human language, the more rigorous in applying the deductions thence drawn to the forms current in ante-historic periods, the more cautious about admitting forces and effects in unknown ages whereof the known afford us no example or criterion, so much more sound and trustworthy will be the conclusions at which we shall arrive. It is but a shallow philology, as it is a shallow geology, which explains past changes by catastrophes and cataclysms. (LSL 287)

And as if to remind the reader of the fact that the new geology was of recent date only, Whitney points out that only now in his time and age do even school children know that the biblical account of the earth's history has little to do with geological fact (cf. LSL 382).

All these analogies apart, linguistic change, Whitney insists, has its source in the individual speakers of a given language if and when their innovations are accepted by the linguistic community. Since, however,

the gradual assent can be but slowly gained, and can be gained for nothing which is too far removed from former usage, [...], linguistic change must be gradual, and almost insensible while in progress. (LSL 44)

Whitney identifies what he calls the following two 'tendencies' on the part of speakers that are the source of language change:

first, to make things easy to our organs of speech, to economize time and effort in the work of expression; second, to get rid of irregular and exceptional forms, by extending the prevailing analogies of the language. (LSL 28)

In other words, speech economy (see also LSL 43, 183-184, and elsewhere) and analogy (see also LGL 75) are in Whitney's opinion the main forces behind language

change (cf. Koerner 1992, for further details). Neither of these can be traced back to something he might have found in the natural sciences. By contrast, his idea of the gradual nature of change evidently derives from geological theory; it remains an important keystone in Whitney's argument. Whitney refers to it on various occasions (e.g., LSL 42, 123, 277-278). But it is clear that its integration into linguistic theory changes its nature and makes its original source disappear, when he states for example: 'Linguistic growth is a slow process, extorted, as it were, by necessity, by the exigencies of use, from the speakers of language' (LSL 183). Although Whitney never used the term, it is clear that his view of the history of language is uniformitarian, a view which, at least in his case, is inspired by and, quite possibly, modelled after Charles Lyell's theory of geological evolution.

3. Concluding Remarks: Linguistics — from 'pirate' to 'pilot' discipline

No discipline operates in a vacuum. The object of research is hardly ever given in advance, not even in the natural sciences, and there are many extra-disciplinary factors that influence the choice of what is to be regarded as 'interesting' and how a particular subject is to be approached. Linguistics is no exception. But it also required people with enthusiasm and sense of commitment to bring about the kind of revolution in the study of language that established linguistics as a scientific discipline in the 19th century which slowly moved from what I called a 'pirate science' to what had earlier been termed a 'pilot science', i.e., a field that, owing to its well-established frame-work of scientific research and the prestige it enjoys in the eyes of the informed public, provides a model to other fields of study (Koerner 1980).

During the last decades of the 19th century, it was the comparative method and the principles of reconstruction as well as the adoption of evolutionary theory which led other fields such as comparative law (e.g., Maine 1871) and ethnology (e.g., Tylor 1871) to view linguistics as a field to emulate. Even Darwin refers approvingly to Schleicher in his *Descent of Man* (1871:54). With the advent of structuralism at the beginning of the 20th century, it appears that linguistics has become still more of an autonomous discipline, and a field from which other disciplines have come to borrow concepts and terms. In other words, linguistics has itself become something of a pilot discipline for fields such as ethnology, psychology, sociology, and other human sciences. Indeed, if we look at new 'turns' in the various linguistic subdisciplines today, we may detect a variety of 'creative transpositions'. We may simply look into fields such as artificial intelligence and neurophysiology for examples, though one should not hope that Geoffrey Sampson's prediction of 1980 according to which the future of linguistics will be 'biological linguistics' will ever become true (*pace* Lightfoot 1982).

NOTES

* My interest in the natural-science influence on linguistic thinking and model-building was first aroused in the Spring of 1972, when I worked on my contribution to *Current Trends* (Koerner 1975), and I have since referred to this subject in various subsequent papers. The present paper is an attempt at a synthesis of my findings, to which I have added the result of more recent research. The subject is an interesting, yet difficult, one since linguists, especially in the 19th century, rarely discuss how they arrived at their theoretical positions and where exactly they got their ideas from. The present version benefitted from comments received from N.E. Collinge (Cambridge) and from discussions following presentations of portions of my findings at conferences and public lectures. The subject is by no means exhausted and could easily develop into a monograph as one gets steeped into the primary sources.

** N.E. Collinge, commenting on the paper, doubts that this is the reason for the use of agricultural terms in Varro, arguing that metaphors from this sphere of human experience are common in all languages.

¹ Morpurgo-Davis (1987:104n.46) points out, however, that “bodily organism” is a misprint for “a bodily organ”, and that Chomsky deals with language acquisition by the child in this context, noting that “In comparing language to something that grows on the human organism, like wings on a bird, Chomsky is relatively close to the early Romantics and above all to Humboldt.” (No evidence for this extrapolation is however adduced.)

² Mertian (1796:71-72 note) refers to the work of the founder of the Institute, Abbé Charles Michel de l'Épée (1712-1789) and his experience of these public demonstrations of sign language given by his successor, Abbé Roch-Ambrose Cucurron Sicard (1742-1822).

*** Quoted in *Athenäum: Eine Zeitschrift von August Wilhelm Schlegel und Friedrich Schlegel* ed. by Gerda Heinrich, 2nd ed. (Leipzig: Reclam, 1984), p.139. I owe the full reference to Hartmut Schmidt, Akademie der Wissenschaften, Berlin (see also Schmidt 1989:213).

**** It is interesting to note that Friedrich Schlegel, in the first volume of the journal, *Europa: Eine Zeitschrift*, launched soon after his arrival in Paris, printed a brief account of the Jardin des Plantes there (pp. 132-133), followed by a report by a visitor from Germany, Ludwig Friedrich Froriep (1779-1847), on recent developments of ‘Naturgeschichte’ in that city under the title of “Ueber den Zustand der Anatomie in Paris” (Froriep 1803).

³ Interestingly enough, the 2-volume American edition of 1837 has a somewhat more cautious subtitle (see Christy 1983:118): “...; being an inquiry how far the former changes of the earth’s surface are referable to causes now in operation”.

⁴ Whitney’s second book, *Life and Growth of Language* of 1875, evidently written to replace the earlier one whose style might well have been “found too discursive and argumentative for a textbook of instruction” (Whitney 1867:vii), is much more concise and exhibits much less fully the conclusions which Whitney drew from the analog between the empirical sciences and the study of language. As a result, only few references to the later work (siglum: LGL) will be made. As a result, only few references to the later work (siglum: LGL) will be made. Much of what Whitney published

in article form is based on his book (as he acknowledged himself on the preface to LSL, p.vi., for instance). His later attacks on Steinthal and Schleicher, who were his main authorities in the 1867 book (cf. LSL vi-vii), have their origin in points of disagreement already signalled there, though much more amplified later on.

⁵ However, the fact that references to Lyell and Whewell are found in the entries on 'uniformitarianism' and 'catastrophism' in the *Century Dictionary and Cyclopaedia* (New York, 6 vols., 1891; 2nd ed., 10 vols., 1897), of which Whitney was the editor-in-chief, cannot be taken as a sufficient proof that he was acquainted with their work when he was writing his 1867 book (as Christy [1983:79] suggests). As a matter of fact, in LSL Whitney makes no reference to Whewell, Darwin, Spencer, or Huxley (cf. Christy, p.104, n.19), who might have been relevant to his argument. However, on Darwin's theory Whitney refers to Schleicher's (1863) essay, at the same time pointing out that Schleicher was "overlooking the fact that the relation between the two classes of phenomena is one of analogy, not of essential agreement" (LSL 47n).

⁶ It is interesting to note that, as late as 1880, the phonetician and general linguist Friedrich Techmer (1843-1891) clearly held natural-science views, including those derived from Cuvier's "principe de la corrélation des formes dans les êtres organisés" (cf. Christy 1983:57). Likewise, even in 1891, Carl Borinski (1861-1922) wrote in his *Grundzüge des Systems der artikulierten Phonetik zur Revision der Prinzipien der Sprachwissenschaft* (Stuttgart: G.J. Göschen) that linguistics had to do with anatomy.

⁷ LSL had a large number of editions (the 6th dating from 1896), both in Britain and the United States, an adaption published in London in 1876 and a translation, with authorized additions by the translator anxious to adapt the text for his audience, into German in 1874. — Whitney's second book on general linguistics of 1875 fared even better, in part also because it was much shorter and less discursive (cf. Koerner 1988 [1980]:3 and 13, n.3, for further information).

⁸ Thus, when talking about the development of English toward a monosyllabic structure which seems to make it look similar to a language such as Chinese, Whitney again cites a geological analog to make his point that English remains an Indo-European language despite the loss of most of its inflections, arguing that the analyst "finds no more difficulty in distinguishing the one from the other, and recognizing the true character of each, than does the geologist in distinguishing a primitive crystalalline formation from a conglomerate, composed of well worn pebbles, of diverse origin and composition, and containing fragments of earlier and later fossils" (LSL 265). Likewise, in his 1875 book, Whitney points out that the "method of the modern inductive sciences" is applicable to the sciences of language, and that the "parallel between linguistics and geology [...] is here the closest and most instructive" (LGL 195).

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The Lexicon and Linguistic Change*

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Just like any other component of the language, the lexicon is subject to change. Such changes are of two kinds: they can take place within the lexicon, when they are due to internal developments, such as the four common methods of word-formation—derivation, compounding, back-formation and conversion. Derivation is the formation of a new lexical item by means of the addition of a so-called derivational affix to an existing lexical item; it is a very common and very productive method of word-formation, which was already operative in Old English. The formation of agent nouns comes under this heading: *bake* – *baker* (OE *bacan* – *bæcere*), *play* – *player*, etc., but also the formation of nouns from adjectives: *good* – *goodness*, etc. Compounding is the formation of a new lexical item by means of the close combination of two existing lexical items; like derivation it is a very common and very productive method of word-formation, and like derivation it was already operative in Old English (cf. the compounds in the poetic diction of Old English). A recent example is *househusband* from *house* and *husband*, on the analogy of *housewife*, but which is, at least to a historical linguist, a most peculiar form, since the first element of this compound (*house*) is not recognized as being the same as the first part of its second element (*hus* in *husband*). *Housewife*, not surprisingly, has a much longer history and is first recorded in Middle English in the *Ancrene Riwe* of about 1225. Back-formation is the formation of a new lexical item by means of the subtraction of a derivational suffix from an existing supposed derivative. Thus, back-formation is the opposite of derivation. An example is the verb *televise* formed from the noun *television*, modelled on the derivation of the noun *revision* from the verb *revise*: in derivation, the process of word-formation works in this way:

(1) revise + -ion (noun suffix) → revision

while in back-formation the process goes in the opposite direction:

(2) television – -ion → televise

Conversion (also known as functional shift or functional change) is the deliberate transfer of a lexical item from one part of speech to another: in the phrase *to have a shave*, *shave* functions as a noun, though we primarily think of this lexical item as a

verb. Conversion should not be confused with the phenomenon that lexical items belonging to different parts of speech have ended up with the same form as a result of the levelling of inflectional endings, as in the case of *love* (noun and verb; OE *luf-u* and *luf-ian* respectively) and *sleep* (noun and verb; OE *slæp* and *slæp-an*). If a distinction between these two cases is needed, the case of *shave* may be called an instance of “synchronic homonymity”, and the case of *love* and *sleep* instances of “diachronic or historical homonymity”.

Changes to the lexicon can also be brought about by the influence of another language, and in this case we speak of borrowing—the introduction of loanwords and loan-translations. Borrowing is, therefore, a linguistic phenomenon in which two languages are involved, as a lexical item of the one language is transferred to the other. This transfer may be complete, i.e. with respect to both form and meaning, although the form may be adapted to conform to the syntactic, phonological and morphological patterns of the recipient language; this is what I would call “lexical borrowing”, an example of which is ME *dauncen*, a lexical borrowing from French, ousting native *hoppen* (OE *hoppian*).

If only the meaning of the foreign word is taken over, we may speak of a partial transfer: in that case the new meaning is expressed either by an existing native word through extension of meaning (“conceptual borrowing”) or by a new formation consisting of native lexical elements which translate the component parts of the foreign word literally (usually referred to as a “loan-translation” or “calque”).

An example of conceptual borrowing is OE *blētsian* (itself a derivative of the noun *blōd* ‘blood’), which originally meant ‘to sprinkle with blood’, and the subsequent extension of meaning is explained by Wrenn in these terms (1949:39):

the heathen Old English priest sprinkled the blood of a sacrificed bull on the worshippers in order to communicate some magical power or strength to them: and when the Roman Christian priest gave his benediction in making the sign of the Cross, he too was communicating a divine favour to the worshippers: so that *blēt-ian* ‘bless with the sign of the Cross’, came exactly to translate the Latin *benedicere*.

Examples of loan-translations are OE *gōd-spell* ‘gospel’ translating L *bona adnuntiatio* ‘good tidings’, itself a loan-translation of Gr *εὐ-αγγέλιον* (which was later borrowed into Latin as *evangelium*); OE *earm-heort* ‘merciful’, literally ‘poor-hearted’, translating L *miseri-cors*. OE *ymb-snide*, translating L *circumcisio*, shows that the component parts of the foreign word were even translated literally when they were prefixes. Two well-known loan-translations in Middle English occur in the title of Dan Michel of Northgate’s *Ayenbite of Inwyrt*, where *ayen-bite* ‘remorse’ translates OF *remors*, an adaptation of medL *remorsus*, and *inwyrt* is a conceptual loan, translating L *conscientia* ‘inward knowledge’.

There is, however, an altogether different type of borrowing, a type that takes place within the lexicon of a language without other languages being involved and that might therefore be called borrowing within the lexicon. Since little attention has

been paid to this phenomenon so far, my paper will examine this type of borrowing in detail, and examples will be chosen from the lexicon of Middle English.

Borrowing within the lexicon takes place between lexical items that have reached a high degree of synonymity but are never completely synonymous, though they usually become full synonyms as a result of this kind of borrowing. Near-synonymity is therefore a prerequisite for borrowing within the lexicon: lexical items involved in this process share some, usually most but never all, of their senses. The following types of borrowing within the lexicon can be distinguished: if it is a meaning or sense that is borrowed by a lexical item from another lexical item under the influence of their shared meaning, we may speak of *semantic borrowing*. An instance of semantic borrowing in Middle English is the sense 'Joking, jesting; a joke, jest', sense 3 of the noun *game*, which was borrowed by the noun *plei* on the basis of the near-synonymity between these two nouns:

- (3) 'Joking, jesting; a joke, jest' = *game*, sense 3 \Rightarrow *plei*

On the other hand, we have to do with *phrasal borrowing* if it is a phrase or collocation that a lexical item is found collocate in that is borrowed by another lexical item under the influence of their shared meaning. An example of phrasal borrowing is the phrase *no childes plei* 'no child's play, no trifle, a serious matter', which was modelled on the phrase *no childes game* on the basis of the near-synonymity between *plei* and *game*, just as the phrase *in ernest or in plei* was modelled on the similar phrase with *game* :

- (4) *no childes game* = *game*, sense 4d \Rightarrow *plei: no childes plei*

- (5) *in ernest or in game* = *game*, sense 3 \Rightarrow *plei: in ernest or in plei*

This last example of phrasal borrowing illustrates at the same time that these two types of borrowing often go hand in hand: semantic borrowing may lead to phrasal borrowing, just as phrasal borrowing may lead to semantic borrowing; usually it is possible to say which of the two led to the other. For instance, in the case of the 'joke, jest' sense just referred to, it appears that this sense is attested for OE *gamen* in King Alfred's translation of Pope Gregory's *Pastoral Care*:

- (6) *Gregory's Pastoral Care* 248/1 (Sweet 1871:248):

Hwæt sceal ic ðonne buton hliehhan ðæs, ðonne ge to lore
weorðað, & habban me ðæt to gamene, ðonne eow ðæt yfel on
becymð ðæt ge eow ær ondredon?

("What then can I do but laugh at your ruin, and mock, when the
evil ye formerly dreaded comes on you?" [transl. by the editor])

but there are no instances of OE *plega* in this sense, which is first attested for its

Middle English descendant *plei* in early Middle English in the *Ancrene Wisse*:

(7) *Ancrene Wisse* 175/13 (Tolkien 1962:175):

Habbeð þah to ower bihoue þis litle least ende of alle cuðe sunnen, as of prude, ..., of sum fals word, of sware, of *plohe*, of ischake lahtre.

(Have, then, for your own benefit absolutely no use for all known sins, such as pride, ..., lying, swearing, jesting, scornful laughter.)

These and other examples (I cannot present all the evidence here) suggest that there was indeed a semantic transfer of the 'joke, jest' sense from OE *gamen*/ME *game* to ME *plei*, or putting it the other way about, ME *plei* borrowed the 'joke, jest' sense from ME *game*. This semantic transfer or semantic borrowing was made possible by the fact that the two words shared some of their meanings, and the process of semantic borrowing or semantic transfer that I am describing here is in fact a process towards full synonymy. Elsewhere (Aertsen 1987:46, 278) I have defined the meanings of ME *game* and ME *plei*, and Table I is a simplified description of these meanings.

The two sense schemes given in Table I represent the state of affairs in late Middle English, when the process of synonymization was virtually completed. Note that the words *game* and *plei* were different in their first or original sense, *game* being essentially stative, *plei* essentially active. This difference may also explain why *game* did not take over the first sense of *plei*, although a more important reason might be the fact that the first sense of *plei* had become obsolete by 1300, i.e. by the time the process of synonymization was in fact getting started. Each of the two words probably developed its second sense independently of the other word, as both words are attested in this sense in Old English, although the ways in which they may have logically developed this second sense were different, since their respective starting-points were different.

Sense 3 of *plei*, 'A state of joy or pleasure', is a fourteenth-century development and is, in all likelihood, based on the first sense of *game* (which goes back to Old English). In other words, sense 3 of *plei* is an instance of semantic borrowing; I will explain later why it is an instance of semantic borrowing, when I mention the reasons why this phenomenon and the related phenomenon of phrasal borrowing took place.

Sense 3 of *game* and sense 4 of *plei* are what I have called the 'joke, jest' sense, which is illustrated by examples (6) and (7) above. The phrase *in earnest or in game* comes under this sense as well. Its literal meaning 'in earnest or in jest' was frequently reduced to that of a kind of general or indefinite adverbial, meaning something like 'on any occasion' as in (8):

Table I
The meanings of game and plei in Middle English

<i>game</i>	<i>plei</i>
	1. Exercise, brisk or lively movement.
1. A state of joy or happiness.	
2. Exercise or action undertaken for pleasure or happiness. 2a. Amusement, diversion; entertainment. 2b. Feasting, revelry. 2c. Amorous sport; sexual play.	2. Exercise or action by way of recreation. 2a. In good sense: amusement, diversion; entertainment. 2b. In bad sense: profligate indulgence, revelry. 2c. Amorous sport; sexual play.
	3. A state of joy or pleasure, often resulting from an action undertaken for amusement.
3. The disposition to a non-serious attitude or activity, or an instance of such an attitude or activity.	4. The disposition to a non-serious attitude or activity, or an instance of such an attitude or activity.
4. A particular amusement or diversion. 4a. Of a non-competitive nature: an amusement, diversion, pastime. 4b. Of a competitive nature: a game or sport. 4c. Martial play. 4d. The play of children.	5. A particular amusement or diversion. 5a. Of a non-competitive nature: an amusement, diversion, pastime. 5b. Of a competitive nature: a game or sport. 5c. Martial play. 5d. The play of children.
5. In transferred sense: allusive and ironical uses. An act or proceeding, esp. of a crafty or underhand kind; manner of action.	6. In transferred sense: allusive and ironical uses. 6a. An act or proceeding, esp. of a crafty or underhand kind; manner of action. 6b. A device of magic, a trick of conjuring.
6. A theatrical play or performance.	7. A theatrical play or performance.
7. Performance on a musical instrument.	8. Performance on a musical instrument.
8. Game animals; the game killed or caught.	

- (8) Mannyng *Handlyng Synne* 3479 (Furnivall 1901:120):
 3yf þou yn earnest or yn game,
 yn scorne blessedyst Goddys name;
 Or 3yf þou were so wunderly proude
 Þat þou mysseydyst God al aloude,
 For any chaunce þat may betyde
 Skorne nat God, ne wyþ him chyde.
 (If you mockingly glorified God's name on any occasion, or if you were wo exceptionally proud that you reviled God in a very loud voice, do not, no matter what may happen, scorn God or complain angrily to Him.)

This example comes from a text of about 1300 and is the earliest instance of the set phrase in Middle English, though the contrast between *ernest* and *game* is first found in the biblical paraphrase *Genesis and Exodus* of about 1250, but there the contrast is expressed contextually and not by this set phrase. Example (9), which is from about 1385, has this phrase with the noun *plei* instead of *game*:

- (9) Chaucer *Knight's Tale* A.1125 (Robinson 1957:28):
 This Palamon, whan he tho wordes herde,
 Dispitously he looked and answerde,
 "Wheither seistow this in earnest or in pley?"
 "Nay," quod Arcite, "in earnest, by my fey!"
 God helpe me so, me list ful yvele pleye."
 (When Palamon heard these words, he angrily looked about and answered, "Do you say this in earnest or in jest?" "No," said Arcite, "in earnest, by my faith. God help me, I am not at all in the mood for jesting.")

As example (9) is of a later date than example (8), the phrase with *plei* must be an instance of phrasal borrowing.

For reasons of space I cannot deal with all the senses of *game* and *plei* as given in Table I, but I would like to comment on the subsense 'The play of children', 4d in the sense scheme of *game* and 5d in that of *plei*. This sense is first attested for *plei* in a text of about 1200 (Lazamon's *Brut*, l.7762), but there are no occurrences of *game* in this sense, that is, there are none that have survived. Under this particular subsense we should include three phrases: *childer plei/ game* 'a children's game or pastime', *childes plei/game* 'child's play, something easy' and *no childes plei/game* 'no trifle, a serious matter or encounter'. Table II lists these three phrases, together with their first recorded instances.

In Table II the vertical arrows pointing downward indicate how the various applications of this subsense developed logically from one another; horizontal arrows pointing left or right indicate instances of phrasal borrowing. In other words, the

phrase *childer plei* developed logically from the meaning 'the play of children' of the noun *plei*. The phrase *childer plei* was then borrowed by *game* as *childer game*; from *childer game* with the literal meaning the phrase *childes game* with a figurative meaning arose, which was in turn borrowed by *plei* as *childes plei* (but this is questionable, see below). The phrase *childes game* with the figurative meaning then developed the negative phrase *no childes game*, also with a figurative meaning, which was borrowed by *plei* as *no childes plei*. The development sketched in the preceding lines seems plausible enough, but actually there are a few problems which are caused by the first recorded instances.

Table II
The subsense 'the play of children' of ME *game* and ME *plei*
together with three phrases and their first recorded instances

	<i>game</i>		<i>plei</i>
'the play of children'	---		1200 <i>Lazamon Brut</i> 7762 1340 <i>Ayenbite of Inwyt</i> 143/16
			↓
childer ~, children's game or pastime	1400 <i>Wars of Alexander</i> 1773 1440 <i>Prose Life of Alex.</i> 21/35 1450 <i>St. Cuthbert</i> 1047	←	1200 <i>Lazamon Brut</i> 7764 1450 <i>St. Cuthbert</i> 1026
	↓		
childes ~, child's play, something easy (<i>fig.</i>)	1300 <i>Chorister's Lament</i> 48		[1400 <i>Vices & Virtues</i> 141/35]
	↓		
no childes ~, no trifle, a serious matter or encounter (<i>fig.</i>)	1325 <i>Otuel & Roland</i> 489	→	1395 Chaucer <i>Merchant's Tale</i> E.1530

One of these problems concerns the phrase *childer game* with the literal meaning, which is first recorded about 1400: how can it give rise to the phrase *childes game* with the figurative meaning, which is first recorded about 1300? The solution to this problem is easy, is child's play as it were. The literary texts produced in English in the second half of the thirteenth century were, with one or two notable exceptions, moralistic religious writings or chronicles about the great deeds of noble heroes such as King Arthur or Charlemagne. In such writings there was no place for something as down to earth as accounts of children's games, unless they could be used to some specific, often moral, purpose, as in *Lazamon*, in *Ayenbite* and in saints' lives. In the 'Life of St. Nicholas' in the *South English Legendary* (of about 1300) we find the phrase with *plei*, while in *St. Cuthbert* (of about 1450) we find

both phrases, the one with *plei* as well as the one with *game*. I would like to argue, therefore, that the phrase *childer game* with the literal meaning must have existed, at least in the spoken language, in the second half of the thirteenth century, making a further development to a figurative use of this phrase possible by, say, 1300.

A second problem concerns the instance of the phrase *childes plei* in *The Book of Vices and Virtues*. It is the only instance of this phrase in Middle English¹, but what is perhaps more important than its uniqueness is that this phrase does not really make sense in the context:

- (10) *Book of Vices and Virtues* 141/35 (Francis 1942:141):
 Al hym þenkþ is but childes playe amydde þe strete; where þei
 trauaileþ moche and noþing ne wynneþ.
 (Everything is, it appears to him, but child's play in the street;
 where they labour a great deal and gain nothing.)

The use of the phrase *childes playe* here not only leaves the following adjunct *amydde þe strete* without a clear referent (who are playing in the street?), it also leaves the subject of the following *where* clause, *þei*, without a referent. As in modern *child's play*, the genitive of *childes playe* is singular and the phrase does not denote the play or pastime of a particular child but it denotes a kind of pastime, the kind of pastime that a child usually engages in. It is because of this classifying function of the genitive that the use of the phrase *childes playe* in (10) does not really make sense in the context. I think the instance of *childes playe* in (10) should be attributed to a translation error, since the same passage occurs in an earlier translation without the error and as a result the passage there makes sense:

- (11) *Ayenbite of Inwyt* 143/16 (Morris 1866:143):
 zuo moche him þinggþ þet hit is ase þe play of children amidde þe
 strete / huer y-noȝ hi trauaileþ and naȝt ne winneþ.
 (It appears to him to be so to such a degree that it is as the play of
 children in the street, where they labour a great deal and gain
 nothing.)

In this translation by Dan Michel of Northgate the phrase *þe play of children* makes good sense as a whole, and *children* is in the plural so that the *hi* 'they' of the following *huer* clause has a referent. The anonymous translator of *The Book of Vices and Virtues* could only have made the mistake of translating *childes play* if such a phrase already existed in the language or if there was a similar phrase with another noun than *plei*, on which he could then model his phrase *childes plei*. As I said above, there are no other recorded instances of this phrase in Middle English, but there were two phrases which he might have used as his models, *childes game* and *no childes plei*. On the basis of either one of these he might have coined his phrase *childes plei*.

From the phrases *childer plei/childer game* and *childes game/childes plei* it is

only a small step to the phrase *barn leik*, which is an example of the third type of borrowing within the lexicon. This type of borrowing is found when a phrase, a compound or combination in the standard language is rendered in a dialect by an exact dialect equivalent. Thus in the case of *barn leik*, the northern dialect words *barn* meaning 'child' and *leik* meaning 'game, play' were substituted for the elements of the phrase *childer plei/ childer game* occurring in the standard language. This process can be represented schematically in the following way:

$$\left. \begin{array}{l} \text{childer plei} \\ \text{childer game} \end{array} \right\} \left[\begin{array}{l} \text{child} = \text{barn} \\ \text{plei / game} = \text{leik} \end{array} \right] \Rightarrow \text{barn leik}$$

An actual instance of this dialect compound is given in (12):

(12) *Prose Life of Alexander* 36/29 (Westlake 1913:36):

I sent hym a balle, a toppe, & a scourge, for to lere barne-laykes.
(I sent him a ball, a top and a whip to learn children's games.)

This third type of borrowing within the lexicon may be called either "dialectal loan-translating" or "dialectal phrasal borrowing", depending on how one regards dialects. A dialect has its own distinct lexicon, and in the case of *barn leik* the borrowing results from an influence from outside this lexicon, the existence of the phrase *childer plei/ childer game* in the standard language, which came to be translated as it were into the northern dialect as *barn leik*, so that it is in a way a dialectal loan-translation. Yet it cannot be denied that the relation between a dialect and the standard language is different from the relation between two languages, and therefore the term dialectal phrasal borrowing may also be appropriate. The situation can be resolved by calling a phrase like *barn leik* simply a "dialectal borrowing".

As to the question why borrowing within the lexicon takes place or took place, I would like to suggest three reasons. The first is that it helped poets find rhymes or, in the case of alliterative verse, alliterating words. All occurrences of sense 3 of the noun *plei*, for instance, the 'state of joy or pleasure' sense, which I said is a borrowing from *game*, are found in rhyme or in alliterating position, and the same is true of the phrasal borrowings from *game*, such as *in earnest or in plei* (example (9)) and *no childes plei* (see Table II). It is true that this does not explain how the 'joke, jest' sense of *game* came to be transferred to *plei*, as its first recorded instance occurs in prose, in the *Ancrene Wisse*, quoted above as example (7). It appears, however, that the great majority of instances of semantic and phrasal borrowing that I examined are found in poetry and that it is extremely rare to have a *first* recorded instance in prose. Nevertheless the case of example (7) needs to be explained. At first I thought this instance of semantic borrowing was to be explained on stylistic grounds: the borrowing was due to lexical variation in order to avoid repetition. For this explanation to be valid, there would have to be instances of *game* with the same or nearly the same

meaning in the immediate context, but it turned out that in the context there are not any instances of *game* at all, so that there has to be another and better reason. The semantic borrowing underlying the use of *plei* in (7) is, I suggest, due to semantic factors—both *game* and *plei* are used in the *Ancrene Wisse* in a negative sense, that is, they invariably denote something one should not be doing. Thus, *game* is used with reference to the devil's feasting, to revelry or to "wrestling and other foolish, stupid, wicked, sinful sports" (*oðre fol gomenes*). Likewise, *plei* is used with reference to playing in the churchyard, which was a form of sacrilege, and with reference to joking or jesting (example (7)), which was felt to be sinful because when you spoke in jest you were not telling the truth.² There is in (7) an early example of the phenomenon of *semantic variation*, by which a writer reserves some meanings for one word and other meanings for another. Chaucer and Lydgate, by the way, are two later writers in whose works this phenomenon is very noticeable. When the author of the *Ancrene Wisse* wanted to express the notion of 'jesting', it meant that he (or she) either had to change all the instances of *game* used so far into instances of *plei* in order to be able to use the 'joke, jest' sense of *game* or else had to borrow this sense from *game* and assign it to *plei*. Since *plei* is used again with this particular meaning later on by this writer, the decision to borrow must have been made consciously. He could, of course, have used *game* to express the notion of 'jesting' without changing the other instances of *game*, but he did not and instead went through the trouble of assigning a new meaning to *plei*.

I just mentioned lexical variation as a possible reason for borrowing within the lexicon, but had to reject it on account of the context of example (7). But in the case of the dialectal borrowing *barn leik*, example (12), it seems to be the only reason, since the author of the *Prose Life of Alexander* uses the corresponding phrase of the standard language, *childer game*, elsewhere in the same passage.

In this paper I have presented evidence for the existence of a kind of borrowing that takes place within the lexicon between words that are nearly synonymous and which usually become full synonyms as a result of this process of borrowing. On the basis of an analysis of the semantic field of words for 'play' in Middle English, I have distinguished three types of this kind of borrowing: semantic, phrasal and dialectal borrowing. I have given three reasons why it takes place: in poetry it is usually for the sake of rhyme and alliteration, while in prose it is for the sake of semantic variation or lexical variation. I am currently working on a similar analysis of another semantic field in Middle English, the field of words for 'joy', and a preliminary ordering of the material collected so far has convinced me that there is borrowing within the lexicon in this semantic field as well, though it is as yet too early to quote any examples from this field. It does mean, however, that borrowing within the lexicon is not an isolated phenomenon occurring only in the semantic field of words for 'play'.

NOTES

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¹ I verified this by checking the files of the *Middle English Dictionary* at the University of Michigan before coming to this conference.

² Chaucer, in one of his lighter moods, has the Host say the exact opposite in the *Canterbury Tales*:

A man may seye ful sooth in game and plei.
 (A man may say something very true in playful jest.)
 (*Cook's Prologue* A.4355 [Robinson 1957:60])

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The Semantic Development of *can* and *could* from Old English to the Present

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1 Introduction

The Modern English modal auxiliary *can* originated from the Old English verb *cunnan* which meant ‘to know something’, while Modern English *could* evolved from its past tense meaning ‘to have learned (something)’ (OED 1961). By Middle English *can* had taken on the primary meaning of ‘ability’ while the ‘knowledge’ meaning had become secondary. Also by this period the present and past tense meanings of *can* and *couth* had begun to diverge, a process which continues today. In Early Modern English *can* developed a meaning of ‘possibility’ which is its primary use today, while in Middle English *could* developed a ‘hypothetical’ meaning which became its leading meaning in both Early Modern and Modern English.

The purpose of this paper is to investigate the semantic evolution of the verb *cunnan* from Old English to the present, to trace the emergence of new meanings, and to examine the divergence of present and past tense uses. This research is based on an original examination of *can* and *could* found in *Beowulf* (circa 750 A.D.), *Sir Gawain and the Green Knight* (circa 1400), and *Hamlet* (circa 1600). These works contained 82 instances of *can* and 55 instances of *could*, for a total number of 137. Included for purposes of comparison is the distribution of *can* and *could* in a written corpus of Modern English (Coates 1983:86, 109). These semantic distributions are displayed in Table 1.

2 *cunnan* in *Beowulf*

Beowulf contains 9 instances of *cunnan* in the present indicative, 1 in the present subjunctive, and 12 in the preterite indicative.

2.1 *The Present Tense*

In six cases in the present tense, *cunnan* takes a direct object denoting a person (1), place (2), or quality (3); in two instances it is followed by an infinitive (5) (6), and in

Table 1
The semantic distribution of can and could
in Beowulf, Sir Gawain, Hamlet, and Modern English

	<i>Beowulf</i>	<i>Sir Gawain</i>	<i>Hamlet</i>	ModE
Present tense				
know/know how to	7 (78%)	2 (40%)	1 (2%)	0
ability	2 (22%)	3 (60%)	38 (56%)	57 (25%)
possibility	0	0	26 (39%)	148 (64%)
conditional	0	0	1 (2%)	0
permission	0	0	1 (2%)	8 (3%)
other	0	0	0	18 (8%)
<i>total</i>	9	5	67	231
Present subjunctive				
know	1	0	0	0
Past tense				
know/know how to	9 (75%)	3 (27%)	0	0
ability	3 (25%)	5 (45%)	4 (13%)	61 (29%)
hypothetical	0	3 (27%)	26 (81%)	65 (31%)
possibility	0	0	2 (6%)	64 (31%)
permission	0	0	0	5 (2%)
other	0	0	0	15 (7%)
<i>total</i>	12	11	32	210

the last case it is followed by a subordinate *where* clause (4). When followed by a noun phrase or by the embedded *where* clause, *cunnan* means 'to know', as the following examples indicate:

- (1) *Ic minne can glædne Hroðulf, þæt he þa geogoðe wile arum healdan;* (1180)
 'I know my feastive Hrothulf that he the youthful will piously maintain;'
- (2) *Him se oþer þonan losað wigende, con him land geara.* (2062)
 'Thence the other warrior escapes, [he the] land well knows.'