

DIFFUSION PROCESS IN LINGUISTICS AND TECHNOLOGY

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ABSTRACT

Diffusion is typically characterized by adult-adult contact that leads to borrowing and has minimal impact on linguistic structure. All linguistic variation is the result of either diffusion or independent innovation that we may operationalize social contact as geographical distance. It is clear that the assumptions are imperfect, but they allow us to examine diffusion via the distribution of linguistic variation as a function of geographical distance.

Key words: Diffusion, Transmission, Lexical Diffusion, Technology Diffusion, Innovation

Introduction

Linguistic changes have probably been propagated via normal contact as opposed to via conquest, recent settlement and large-scale migration. [1] Labov (2007) distinguishes between change that occurs through transmission and change that occurs through diffusion. Diffusion is typically characterized by adult-adult contact that leads to borrowing and has minimal impact on linguistic structure. Transmission, on the other hand, normally involves natural language acquisition by children that is often coupled with “vernacular re-organization” [2]. Change occurs when subsequent generations acquire the restructured forms and as each generation incrementally advances those forms. All linguistic variation is the result of either diffusion or independent innovation that we may operationalize social contact as geographical distance. It is clear that the assumptions are imperfect, but they allow us to examine diffusion via the distribution of linguistic variation as a function of geographical distance. Several studies in quantitative linguistics have examined this relation, starting with Séguy [3].

The literature from dialectology and historical linguistics has mostly traced the diffusion of individual features. Some fundamental questions about one of the most important and least understood issues in cultural and linguistics geography: the diffusion of linguistics innovations. In the context of cultural and linguistics geography, an innovation of defined as either a new linguistics feature or the expansion of a rarely used one. Linguistics features can be phonological (i.e. sound changes represented by a vowel merger in the pronunciation of words such as cot and caught), grammatical, or lexical. This investigation of linguistics diffusion may be best understood within the larger context of research on spatial diffusion may be best understood within the larger context of research of spatial diffusion, on linguistic geography, and on language change in a social context. Language is a means of communication. Mankind was speaking long before the dawn of recorded history. Many people survive without a writing system. Language is a vocal means of communication. Everything we utter is set forth in a meaningful order, in order to have communication. We must have (a) vocabulary—symbols, (b) grammar grammatical signal.

Linguistic Fields

- a) **Applied linguistics:** Applied linguistics is an interdisciplinary field of study that identifies, investigates and offers solutions to language-related real-life problems. We can divide applied linguistics in two levels. Applied linguistics is an interdisciplinary science.

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- b) **Macro-Applied Linguistics:** The study of language and linguistics in relation to practical problems.
- c) **Micro-applied linguistics:** The study of second and foreign language learning and teaching.

In linguistics we can see that there are many types of diffusion like lexical diffusion, syntactic diffusion, and social diffusion.

I. Lexical Diffusion

Lexical diffusion refers to the way a sound change affects the lexicon: if sound change is lexically abrupt, all the words of a language are affected by the sound change at the same rate. If a sound change is lexically gradual, individual words undergo the change at different rates or different times. Whether sound changes exhibit gradual or abrupt lexical diffusion is a topic that surfaces persistently in historical linguistics, but as yet has not reached resolution." "There is no evidence that lexical diffusion is the fundamental mechanism of sound change. It happens but is only a complement--and a small one at that--to regular sound change. The most important factors in linguistic change appear to be long-standing trends in the language, internal variation, and social forces among speakers." [4].

- That lexical diffusion is sporadic
- That it always affects the most frequent words first.
- That lexically diffused changes show no clear phonetic conditioning
- That phonetically regular change is productive, whereas lexically diffused changes are not.
- That lexical diffusion affects only phonetically abrupt changes associated with lexical rather than post lexical rules.
- That word frequency is independent of word class.

That analogy and borrowing suffice to account for lexical diffusion.

II. Attribution of Lexical Diffusion Effects to Analogy and Borrowing

—[D]iffusionary effects in the spread of phonological change through the lexicons of speakers... are actually epiphenomenal, being the result of already-needed mechanisms of analogical change and dialect borrowing." [5].

III. The Problem With Lexical Diffusion

Analogical changes affect the least frequent words first--"where memory fails"—e.g. cows, dragons, aliens But mice, geese, teeth, regular verb (correspond, irrigate, elucidate) vs. irregular verbs (be, go, see) whereas, lexical Diffusion often affects the most frequent word first. Sound change includes any processes of language change that affect pronunciation (phonetic change) or sound system structures (phonological change). Sound change can consist of the replacement of one speech sound (or, more generally, one phonetic feature) by another, the complete loss of the affected sound, or even the introduction of a new sound in a place where there previously was none. Sound changes can be environmentally conditioned, meaning that the change in question only occurs in a defined sound environment, whereas in other environments the same speech sound is not affected by the change. The term "sound change" refers to diachronic changes, or changes in a language's underlying sound system over time; "alternation", on the other hand, refers to surface changes that happen synchronically and do not change the language's underlying system (for example, the -s in the English plural can be pronounced differently depending on what sound it follows; this is a form of alternation, rather than sound change). The formal notation of sound change:

A > B

is to be read, "A changes into (or is replaced by, is reflected as, etc.) B". It goes without saying that A

belongs to an older stage of the language in question, whereas B belongs to a more recent stage. The symbol ">" can be reversed:

$$B < A$$

"(more recent) B derives from (older) A"

IV. Technology Diffusion

The process by which an innovation is propagated through certain channels over time among the units of a system. Technology is the application of scientific and other knowledge to practical tasks by organizations that involves people and machines.

- a. Technology is about taking action to meet a human need rather than merely understanding the working of the natural world, which is the goal of science.
- b. It uses much more than scientific knowledge and includes values as much as facts, practical craft knowledge as much as theoretical knowledge.
- c. It involves organized ways of doing things. It covers the intended and unintended interaction between products (machines, device, artifacts) and the people and systems who make them, use them or are affected by them through various processes.

V. Stages of Adoption

- a. Awareness - the individual is exposed to the innovation but lacks complete information about it
- b. Interest - the individual becomes interested in the new idea and seeks additional information about it
- c. Evaluation - individual mentally applies the innovation to his present and anticipated future situation, and then decides whether or not to try it.
- d. Trial - the individual makes full use of the innovation.
- e. Adoption - the individual decides to continue the full use of the innovation.

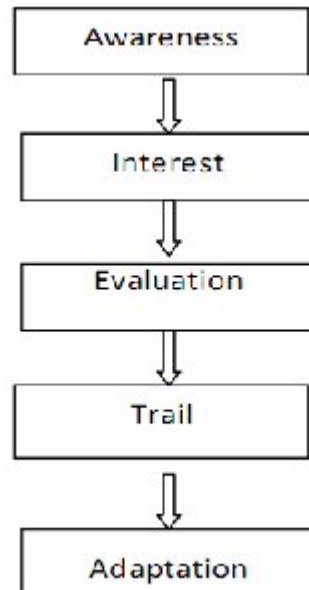


Figure 01: Stages of Adaptation

Conclusion

Attributes of Internet technology that differ from those of traditional instructional technologies and that modify the adoption and diffusion process are discussed, as are characteristics of the potential adopters and strategies that contribute to successful technology adoption and integration within an organization. "Innovation" is similarly used with the nuance of a new or "innovative" technology being adopted. "Diffusion" refers to the stage in which the technology spreads to general use and application. Since early in this century, various "new" educational technologies have been touted as the revolutionary pedagogical wave of the future. Classroom films programmed learning devices, language laboratories, educational television, and computer-assisted instruction and, more recently, interactive videodisc technology have been adopted and integrated into the curriculum with varying degrees of success. Internet technology actually embodies a number of technologies--e-mail, databases, chat rooms, and information and education resources, among others. Additionally, the Internet exhibits many elements that constitute a culture or community-- language, symbols, rituals, interaction, and other elements of communication. Linguistic diffusion is sometimes hierarchical, a correlation of diffusion patterns with the social factors that serve as barriers to and amplifiers of diffusion suggests that different patterns of diffusion are tied to the different social meanings that linguistic features carry. The phenomena of diffusion of language change from diverse perspectives amongst which the dialectological, microsociolinguistic and geolinguistic ones must not be absent, is thus crucial. The attempts of sociolinguists to adapt themselves to those aspects and artifacts of human behaviour, such as social class, sex, age, race, ethnicity, social networks, social groups, attitudes, identity, politics, ideology, etc., as well as of human geography that affect linguistic variation and communication in general.

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