A situation of linguistic contact often produces various degrees of change in at least one of the languages involved. It is shown that the syntactic, as well as the phonological and the lexical, components are the locus of interference from one language on the other. Features of interference are described as part of a systematic pattern build on a strict hierarchy of occurrence. The study takes as an example two languages spoken in Mauritius. Bhojpuri, an Indo-Aryan dialect, appears to be undergoing a rapid evolution under the influence of the island's dominant language, Creole (French based). An implicational scale is set up, based on speech samples, to show which features of Creole interference in Bhojpuri imply others: in the variety of Bhojpuri which is the least influenced by Creole, only lexical items naming modern concepts are found. The variety of Bhojpuri which is the most influenced by Creole contains syntactic transfers, phonological borrowings, and words belonging to the 100-word list of the lexico-statisticians. The in-between varieties are specifically defined by the order in which innovations appear on the scale. In this way, the scale of interference represents the systematic pattern of change which Bhojpuri appears to be undergoing.
A GRADED ANALYSIS OF INTERFERENCE AS A CAUSE OF CHANGE

1.0 This paper will show how interference from one language on another can be analyzed in a way which is both systematic and significant. It is systematic for its represents facts of interference in a hierarchical order, and it is significant because it describes the arrangement of facts of interference at all linguistic levels.

The device used to make this assertion clear is the implicational scale. As its name indicates, the implicational scale represents a series of events in which each event is implied by the presence of an immediately preceding one. Implicational scale analysis allows for the description of a "continuum" of varieties of a language in a particularly interesting way since it specifies the relative position of these varieties in the total output of interference. An implicational scale cannot be constructed if the facts it takes into consideration are random facts of free variation; it can only represent an ordering. Consequently, if a scale can be set up to describe the linguistic events produced by contact between languages, it demonstrates that these events are indeed structured. A situation of contact is shown then to produce a systematic pattern of linguistic interference. For instance, the presence of a feature of interference characterized by the use of a [-native] phone may imply the presence of a more widely used [-native] lexical item. The most conservative varieties of the "receiving" language, then, are those which are described by one end of the scale where innovations are rare, while those varieties which are most innovative as result of interference from the "giving" language are characterized by the features shown at the other end of the scale. Each variety of speech is likewise graded in a hierarchical relationship with all other varieties.

The significance of such graded analysis of interference goes yet further: an examination of the types of interference and the order in which they appear on the scale might throw some light on what a general theory of language change should specify: at which linguistic levels (phonological, syntactic, lexical) does interference take place, and in which relative order can these different kinds of interference take place. Linguists like Meillet and Sapir were reluctant to recognize that borrowing could happen at anything but the lexical and phonological levels; they crucially based their decisions about genetic relationships on morpho-syntactic similarities, that is on the premise that "morphemes" cannot be borrowed. Boas, in the contrary, felt that contact between languages could be as close as to provoke such a happening. Today, the question is kept open by the pidginists/creolists, who have shown how all sorts of interference from one or more languages on another make it very difficult to assign a resulting pidgin/creole to a specific language family. This study will show that at least a limited number of syntactic features of interference can be admitted in a language without resulting in a change in the genetic classification of that language and that syntactic interference is not always the most innovative.

2.0 The case study chosen to argue in favor of the two points stated above, that interference is a highly structured phenomenon, and that types of interference are ordered significantly, takes into consideration two languages spoken in Mauritius, Indian Ocean. Bhojpuri, an Indo-Aryan dialect, appears to be under-
going a rapid change under the influence of the island's dominant language, Creole (French based). No justification will be given here concerning the role of Creole in the evolution of Bhojpuri, for this would be beyond the scope of this paper. However, the fact that Bhojpuri is changing will tentatively be justified by sociolinguistic observations, so that the scale of interference may have some significance as a representation of the evolution of Bhojpuri.

The following study is based on the analysis of the speech of nine informants chosen randomly. The speech samples obtained from them are not necessarily homogeneous and may present stylistic/dialectal variations; the fact that features of Creole interference appear with inconsistency in the speech of an individual is an indication that his idiolect contains more than one style. The point here is not to classify the speech samples, but the specific features of interference which are the manifestations of different varieties of Bhojpuri.

2.1 Features of interference. Indications of Creole interference in Bhojpuri are numerous, but most of them can be categorized under a few distinctive headings which have been called the features of interference. In a tentative study such as this, only those features which were readily observable and well defined were taken into consideration. The relevance of the features chosen derives from the fact that they can be classified implicationally according to a non-reciprocal condition: if feature X is present, then feature Y is also present. A statement of this sort elicits three possibilities: a variety of speech in which both X and Y occur, another variety in which Y occurs but not X, and a third variety which lacks both X and Y. No variety of speech exists, in which X is present but not Y. If feature Y is present in the speech of a Bhojpuri speaker, it represents a certain degree of Creole interference; but if we note the occurrence of feature X we know that X implies the occurrence of feature Y and, consequently, indicates still a greater degree of interference from Creole.

Lexical features. It is assumed here that the 200-word list of the lexico-statisticians is relevant to the question of resistance to change. As the scale will show, this relevance seems to be verified.

Feature A is characterized by the use of a great number of loanwords from Creole. These words have very common equivalents in Bhojpuri, but do not indicate concept expressed by words belonging to the "core vocabulary" as defined by the 200-word list mentioned above. Examples of these words are joli for sumnar 'pretty', or aspere kar- for intázár kar- 'wait'.

Feature B is characterized by the use of some words belonging to the list. Examples are piti for choTa 'small', or lapli for pání 'rain'.

Phonological features.

Feature C represents, in words borrowed from Creole, of two particular Creole phones which do not occur in traditional Bhojpuri, z and y: z as a realization of i in zoli for joli, and y as a realization of b in move for moBe 'bad' for example.

Feature D is the presence of the uvular R in place of the trilled R, the usual phone found in Creole loanwords: roplen 'airplane' is the traditional pronunciation, while Roplen shows phonetic interference.

Syntactic features.

Feature E. Bhojpuri, as an Indo-Aryan dialect, distinguishes between two
kinds of possessive concepts, the reflexive and the non-reflexive, using a
different pronoun for each. In some varieties of Mauritian Bhojpuri influenced
by Creole, the distinction is lost and the reflexive possessive pronoun is not
used.

Feature F. Bhojpuri has two copulas whose use is determined by the following
construction. Here again, some speech samples show the loss of the distinction,
either by the unique use of the preferred form, or by the indiscriminate use of
either form.

Feature G is characterized by instances of Creole word order, which is not
normally found in traditional Bhojpuri. For example, the sentence
\[
\text{laikā lōg ke ēgō lardwāz cahīlīn}^5
\]
S 0 V
is found with the order SVO, normal in Creole:
\[
\text{laikā lōg ke cahīlī ēgō lardwāz}
\]
S V 0

2.2 Scaling of the features. Table I below indicates the occurrence of each
feature of interference in the speech samples obtained from the nine informants.
Positive or negative values are assigned when at least one occurrence of a
feature is found in the speech of an informant. Each feature signals a different
variety of Bhojpuri determined by some differing degree of Creole interference
and in an implicational relation with all other features.

Table I

<table>
<thead>
<tr>
<th>Varieties of speech</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>C</td>
<td>+</td>
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<tr>
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<td>E</td>
<td>+</td>
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<tr>
<td>F</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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</tr>
</tbody>
</table>

A look at the table shows that variety 9 does not show any interference from
Creole as described. If only one feature of interference is evident in a sample,
it must be A, and the variety it describes can be considered as immediately
more innovative than variety 9. Variety 4, to pick another one, is defined
by four features of interference, of which B is the most innovative. When the
features are rearranged as in Table II, it is easy to see that each variety
is defined by just one more incidence of "creolism". The fact that it is
impossible to find varieties of speech which show a positive value for, say, F,
and negative values for E, B, and D justifies the implicational process.
Table II.

<table>
<thead>
<tr>
<th>Varieties of speech</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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</tr>
<tr>
<td>C</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>+</td>
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<td>E</td>
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<td>+</td>
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<tr>
<td>B</td>
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<tr>
<td>D</td>
<td>+</td>
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</tr>
<tr>
<td>F</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

The table shows how the varieties which contain the greatest number of minus signs are the most conservative; as the number of minus signs decreases, the varieties become more innovative. Varieties 5 and 6 seem to be characterized by the same pattern of interference and, consequently, can be considered as similar. 

On the basis of the information given by Table II, it is possible to construct a scale as shown by Figure I, where only the relevant features are indicated:

<table>
<thead>
<tr>
<th>Figure I</th>
</tr>
</thead>
<tbody>
<tr>
<td>most</td>
</tr>
<tr>
<td>innovative</td>
</tr>
<tr>
<td>+G  +F  +D  +E  +E</td>
</tr>
<tr>
<td>5/6  +C  +A  -A</td>
</tr>
<tr>
<td>most</td>
</tr>
<tr>
<td>traditional</td>
</tr>
</tbody>
</table>

The presence of a positive feature in a variety predicts the presence of all other previous features on the scale. Thus it can be shown that interference takes place according to a definite and observable pattern.

3.0 It was just demonstrated how interference can be described in a systematic way. But is it significant? The question asked at the beginning of this paper was whether different linguistic levels of interference occur in a specific order and particularly whether interference at the syntactic level comes about only at the most innovative end of the scale. Figure I shows that innovations in syntax can happen fairly early: feature E, which is a syntactic feature, is found in a speech sample where only two other features of interference, A and C, occur. However, the fact that the two other features of syntactic interference, F and G, appear at the innovative end of the scale, may indicate that syntactic interference is not a priority in the kinds of borrowing which results from language contact. It could moreover be argued that the early occurrence of E is due to a universal constraint toward unification of the expression of possession. Now the question arises as to why feature F, also defined by a loss of distinction of two syntactic expressions, is not subject to the same universal constraints. I would like to suggest that the continued use of the less preferred form of the copula in most varieties of Bhojpuri except the most innovative ones is promoted
by a secondary interference from Standard Hindi, whose copula is very similar. Depending on whether the influence of universal constraint of simplification can be verified, the conclusion reached above stands.

The presence of feature A (lexical) as the first possible innovation corroborates with most linguistic observations: lexical items are the first to be borrowed. However, it is interesting to note that 'core vocabulary' words do resist change as predicted by lexicostatisticians. Unexpectedly, the scale devised here validates the concept of core vocabulary.

The two features of phonological interference are surprisingly quite far apart on the scale. One reason might be that the occurrence of feature C is reinforced, at least partly, by a secondary interference from Standard Hindi, where the /o/ sounds in question exist. Another reason for the relatively rare occurrence of feature D (uvular R) may be found in the specific quality of that sound, notably difficult to produce.

4.0 Earlier in this presentation, it was mentioned that the scale of interference could also represent tendencies in the general evolution of a language. An assertion of this sort is made possible only if extra information, sociolinguistic in nature, is taken into account. A very cursory look at a number of sociolinguistic factors pertaining to the speakers of the speech samples can indicate the general direction of change in Bhojpuri.

4.1 The speaker of variety 1 lives in the city, has a white-collar job, and is 22 years old. He normally speaks Creole at home, creolized French at work and Bhojpuri with his older relatives who live in the country.

Variety 2 is found in the speech of a young (19) woman who also lives in the city. She has a high school degree and works for an airline. At work, she speaks French, English, and Creole. At home, she uses Creole with her family except her mother who speaks only Bhojpuri.

Variety 3 is represented by the speech of a town dweller, 24, who commutes to the city for a menial job, where he uses Creole mostly. At home, he speaks Bhojpuri with his wife.

Variety 4 is the kind used by a young (19) man who lives in town. There, he has the opportunity to speak Creole as well as Bhojpuri; he works frequently as a "labourer" in sugar cane plantations and uses mostly Bhojpuri on the job.

Variety 5 is found in the sample obtained from a 35 year old woman, a housewife, who lives in the city, speaks Creole with her children but Bhojpuri with the members of her family in her generation or older. Additionally, she uses Bhojpuri to communicate with frequent visitors from India.

Variety 6 is used by a 55 year old woman; she lives in the city where she keeps house for her son. At home, she speaks both Bhojpuri and Creole. She speaks Bhojpuri with relatives in the country, and Creole with her neighbors.

Variety 7 is the common type of speech of a 32 year old man who lives in the city. He teaches Urdu at the local school, but speaks Creole with his colleagues. At home, only Bhojpuri is used.

Variety 8 is represented by the speech of a 48 year old man who lives in the city, where he is a Hindi teacher. He speaks Bhojpuri mainly at home and Creole outside the home.

Variety 9 is the one found in the sample speech of a village dweller. As a shopkeeper in the middle of Bhojpuri-speaking village, he speaks that language most of the time, though he uses Creole fluently when needed.
4.2 It is not the aim of this paper to correlate strictly linguistic facts to the socio-economic observations just described. The data used here are much too restricted. However, some casual observations show that relevant factors which appear to condition the choice of varieties by speakers are age, urban versus rural home, occupation, education, and perhaps, sex. These factors seem to converge toward a general condition which is, not unexpectedly, the opportunity to use Bhojpuri. Those speakers who use Creole most frequently are obviously more prone to let Creole interference creep into their Bhojpuri. And since these are mainly young persons with some education and who work in areas where Creole is the dominant language, we can expect that their innovative brand of Bhojpuri represents the Bhojpuri of the close future. Predictions of this sort must of course be very tentative, for a change in the socio-political history of Mauritius might reverse the process under way. The capacity of the scale of interference to represent the direction of change is, consequently, somewhat weak. Its capacity to express systems of interference is however quite useful, as demonstrated.

FOOTNOTES

1. For a good demonstration of the way implicational scales work, see DeCamp 1971.

2. Weinreich (1968) did explain how interference is structured, but his descriptions concern cases of interference, not an overall pattern of interference.

3. Mauritian Bhojpuri has been found to be mainly related to the Bhojpuri spoken in Bihar, India. It has been transported by the great number of indentured laborers who came to Mauritius between roughly 1830 and 1920 to work in the sugar cane plantations.

4. Features of interference occurring at the suprasegmental level would certainly give very interesting results, but their observation would no doubt be quite difficult.

5. This is an indirect construction, but, as it can be considered as the result of a transformation acting upon a direct construction, the sentence is treated as a SOV sentence.

6. The actual larger study shows several discrepancies, probably due to other factors besides Creole interference. The speech samples showing these discrepancies have been omitted from this restricted study for the sake of clarity.

7. Standard Hindi, or General Hindi (sometimes called Hindustani), is heard commonly on the island, particularly on the radio and through movies, both of which are very appreciated by persons of Northern Indian origin.

8. To be precise, only z occurs in Hindi; y does not occur as a labio-dental but rather as a bilabial fricative.

9. As far as this study is concerned, Urdu has the same effect as Hindi on the Bhojpuri speech of an informant.
10. Such an event could happen if pressures, either political or social, to promote the use of Standard Hindi/Urdu were felt. This may, though not certainly, reverse the process of innovations due to the contact with Creole.

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REFERENCES


Fasold, Ralph. 1970. 'Two models of socially significant linguistic variation.' Language 46: 551-63.