

The Game Theory and Language Planning in
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Abstract-1

- The Universal Declaration of Linguistic Rights of Barcelona 1996 has rendered obsolete hegemony language planning schemes. Consequently, a new model of language planning is urgently needed. This model must adhere to the spirit and the letter of the linguistic rights that member states of UNESCO have signed. ...

Abstract - 2

- ...The new model of language planning that is needed must be able to tackle the issue of linguistic plurality found everywhere in Africa, and in Côte d'Ivoire in particular. The Game Theory seems to me to offer the ideal solution to the language planning conundrum that we find everywhere in Africa.

The Universal Declaration of Linguistic Rights

Article 9

- All language communities have the right to codify, standardize, preserve, develop and promote their linguistic system, without induced or forced interference.

Article 10

1. All language communities have equal rights.
2. This Declaration considers discrimination against language communities to be inadmissible, whether it be based on their degree of political sovereignty, their situation defined in social, economic or other terms, the extent to which their languages have been codified, updated or modernized, or any other criterion.

Article 13

1. Everyone has the right to know the language specific to the territory in which s/he lives
2. Everyone has the right to be polyglot and to know and use the language most conducive to his/her personal development or social mobility, without prejudice to the guarantees established in this Declaration for the public use of the language specific to the territory.

Article 15

1. All language communities are entitled to the official use of their language within their territory.

Article 23

2. Education must help to maintain and develop the language spoken by the language community of the territory where it is provided.

Introduction to the Game Theory

Historical Overview

- The Game Theory is a set of hypothesis that help explain, describe, or predict the state of things as they are or could be. The Game Theory is descriptive not prescriptive. It also has a predictive power.

The Proponents of the Theory

1. The Game Theory was originally conceived by the mathematician John von Neumann.
 2. It was applied to Economics by the mathematicians Oskar Morgenstern and by John Nash.
- All 3 received collectively the Nobel Memorial Prize in 1994 in Economics.

Developments of the Theory

- The Game Theory is first and foremost a mathematical and statistical theory. It was first applied to Economics. It is mostly applied to study gambling behaviors and patterns. It has also been applied to Political Science in the resolution of conflicts.

Key Concepts – The Prisoner’s Dilemma-1

- Albert W. Tucker introduced the famous “*Prisoner’s Dilemma*” :The game got its name from the following hypothetical situation: imagine two criminals arrested under the suspicion of having committed a crime together. However, the police do not have sufficient proof in order to have them convicted. The two prisoners are isolated from each other, and the police visit each of them and offer a deal: the one who offers evidence against the other one will be freed. If none of them accepts the offer, they are in fact cooperating against the police, and both of them will get only a small punishment because of lack of proof.

Key Concepts – The Prisoner’s Dilemma-2

- “... They both gain. However, if one of them betrays the other one, by confessing to the police, the defector will gain more, since he is freed; the one who remained silent, on the other hand, will receive the full punishment, since he did not help the police, and there is sufficient proof. If both betray, both will be punished, but less severely than if they had refused to talk. The dilemma resides in the fact that each prisoner has a choice between only two options, but cannot make a good decision without knowing what the other one will do.”

Key Concepts-Nash's Equilibrium

- Nash's equilibrium is a fundamental concept in the Game Theory. It describes a stalemate situation where no player wants to modify his/her behavior or strategy given the behavior or strategy of the opponent.

Application of the Game Theory to Language Planning

Applications to Language Planning

- To the best of my knowledge David Laitin from the University of Chicago is the first to apply the Game Theory to Language Planning and Policy.

Key Concepts – The Linguist’s Dilemma.

- From the Prisoner’s Dilemma to The Linguist’s Dilemma: “In a given country, many languages are spoken. The peoples who speak those languages are proud of their languages and do not want to learn their neighbor’s language. In the same country, there is a language inherited from colonialism. This colonial language is perceived to be the language of modernity and of the future. This colonial language is the only way to well paying jobs. Knowing the colonial language is a must. However, the expansion of the colonial language will invariably lead, sooner or later, to the dismay or death of the local languages. Linguists want to save each local language. What is the solution to the problem?”

Linguistic Equilibrium

- Linguistic equilibrium is achieved in a multilingual environment when the speakers of indigenous languages feel linguistically secure and know that the acquisition of additional languages is not detrimental to their native tongue.

Game Theoretic Views of Language

- Language is not only nor merely a tool for human communication. In the Game Theory it is also seen as:
 1. an economic resource
 2. capital
 3. an investment
 4. an asset
 5. a portfolio

Language Planning Outcomes in the Game Theory

- The Game Theory envisages 4 plausible linguistic outcomes for the “model” sub-Saharan Africa. The model citizen’s linguistic portfolio may be diversified as follows:
 1. $3 \pm 1 = 4$
 2. $3 \pm 1 = 3$
 3. $3 \pm 1 = 2$
 4. $2 - 1 = 1$

Interpreting the “ ± 1 ” in the Equation

- The “ ± 1 ” in the equation takes for granted that European languages constitute now and for the foreseeable future powerful incentives for any sub-Saharan African who wants to be socio-economically mobile.

Explanation of the $3 \pm 1 = 4$ Equation

- If the native language is not the same as the regional language, and if the regional language is not the same as the national language, then the “model” sub-Saharan African must know 4 languages in order to achieve socio-economic mobility.

Explanation of the $3 \pm 1 = 3$ Equation

- If the native language is the same as the regional language, but the regional language is not the same as the national language, then the “model” sub-Saharan African must know 3 languages in order to achieve socio-economic mobility.

Explanation of the $3 \pm 1 = 2$ Equation

- If the native language is the same as the regional language, and the regional language is the same as the national language, then the “model” sub-Saharan African must know only 2 languages in order to achieve socio-economic mobility.

Explanation of the $2 - 1 = 1$ Equation

- Laitin (1992:144) notes that Côte d'Ivoire is the only country in sub-Saharan Africa to which this outcome applies.
- We will explain later what this means.

Application of the Game Theory to Language Planning in Côte d'Ivoire

Current Linguistic Situation in Côte d'Ivoire

1. Number of languages = ± 60
2. Diglossia with or without bilingualism à la Ferguson or à la Fishman
3. French is the dominant language
4. No Ivorian language is taught in school
5. Political and “ethnic” strife
6. What is the future of Ivorian languages

Previous Language Planning Suggestions

1. Hegemonic proposal: the “majority” language approach; i.e.; choose and impose “majority” languages to others.
2. Djité’s (1990) “national” language approach: impose Dioula to everybody.

Obstacles to Previous Attempts at Language Planning

1. Linguistic ethnocentrism
2. Demagoguery and hypocrisy: Laitin (1992:69,113) argues that language planning efforts have not been successful in Algeria and India because of demagoguery and hypocrisy.
3. Elite apathy and ambivalence Laitin (1992: 51, 53).
4. Elite closure, Laitin (1992:57-8, 59, 60, 78).
5. Private subversion of public good, Laitin (1992:152-3)

A Realistic Assessment of French

- Recognize and accept the sober reality that French is the “national” language of Côte d’Ivoire.
- Constitutional language: 1960 constitution “French *shall be* the official language of the Republic of Côte d’Ivoire.” 2000 constitution: “French *is* the official language of the Republic of Côte d’Ivoire.”

Assessment of Linguistic Outcomes in Côte d'Ivoire

- The linguistic portfolio of Ivorians can be described as follows:

$$\left\{ \begin{array}{l} 1 + 0 \\ 2 - 1 \end{array} \right\}$$

{1 + 0} Outcome = French Hegemony

- French monolingualism outcome:

1 + 0
French No mother tongue

- In Abidjan, the economic capital, people 15 or younger are French monolingual. Some children are only monolingual in French. Others have a limited passive understanding of their parents' language.

{2 – 1} Outcome = Imbalance Bilingualism

- Widespread imbalance bilingualism:

2 - 1

Mother tongue + French Mother tongue

- According to Laitin (1992:144) the most accurate assessment of the linguistic situation in Côte d'Ivoire reflects the scenario above. More and more people are losing their bilingual competence in favor of French.

The Game Theory to the Rescue

- The Game Theory can offer a solution to the language planning solution in Côte d'Ivoire without endangering Ivorian languages, while also adhering faithfully to the spirit and the letter of the Universal Declaration of Linguistic Rights.
- The proposed solution does not jeopardize anybody's dreams of socio-economic mobility.

Ideal Solution = Linguistic Equilibrium

- Linguistic Equilibrium

1 + 1
Mother tongue French

- Linguistic equilibrium: Deep down, every Ivorian wants to keep his/her native language. He/she does not want to give it up to learn another Ivorian language while his/her own language risks dismay or death. However, he/she is eager to learn French to increase his/her chances on the market of national and/or international employment.

The Road to Linguistic Equilibrium

1. Replace Spanish and German in Junior High with Ivorian languages. Postpone the teaching of these languages until college
2. The re-training of German and Spanish teachers as native language teachers with full benefits.
3. Vigorous corpus planning efforts in all Ivorian languages.
4. Proficiency in Ivorian languages should be tested in national exams just as German and Spanish are now.

Economic Solvency

- This proposal is economically viable and will not depend on a long term financial commitment from the government. It is estimated that a Spanish or German book cost \$25.00 per student a year. With an estimated enrollment of a bout 1 million student, this will generate \$25,000.000 a year. This in turn will invigorate the local book publishing industry and related economic sectors.

Political Will

- What is needed is the political will to pass the legislation postponing the teaching of German and Spanish until college so as to allow the introduction of Ivorian languages in Junior High school.

A Win-Win Formula -1

- No major restructuring of the school curriculum is expected. Just plugging Ivorian languages in an already existing curriculum.
- No need to hire new teachers. Just the retraining of existing teachers.

A Win-Win Formula -2

- An economically viable solution that allows linguistics and linguists to contribute tangibly and directly to economic development.
- No Ivorian language is lost in the process. Instead, all Ivorian languages will be invigorated.
- No further fragmentation of a socio-politically volatile situation.

Consequences of Inaction

- Continued linguistic disequilibrium: The spread of French will lead to the death or atrophy of Ivorian languages.
- More pronounced linguistic imbalance in urban centers.

Concluding Remarks

- The Game Theory seems to me to be the best language planning solution to the thorny linguistic issue in Côte d'Ivoire. It is the best approach because it does not change the pre-established linguistic norms. It achieves all this while adhering strictly to the letter and spirit of the Universal Declaration of Linguistic Rights. Additionally, unlike other models that depend on governmental subsidies ad infinitum, this approach is economically viable and, if adopted, could fuel millions of dollars into the distressed local economy.

Bibliography

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